

**BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

Application of American Transmission Company LLC, as an Electric Public Utility, for a Certificate of Public Convenience and Necessity to Construct and Operate the Mill Road-Granville Transmission Line Project, Consisting of Two New 138 kV Transmission Lines, Rebuilding Two Existing Double-Circuit 345/138 kV Transmission Lines, and Constructing the 345 kV Mill Road Substation Located Primarily in the City of Milwaukee, Milwaukee County and the City of Brookfield and the Village of Menomonee Falls, Waukesha County, Wisconsin

Docket No. 137-CE-212

AFFIDAVIT OF JOHN SAGONE

I, John Sagone, being first duly sworn on oath, depose and state, as follows:

1. I am an employee of ATC Management Inc. I hold the position of Manager State Regulatory Affairs and Associate General Counsel, and I am authorized to sign this affidavit on behalf of American Transmission Company LLC, and its corporate manager, ATC Management Inc. (collectively "ATC").

2. This request for confidential handling is made on behalf of ATC, the corporate headquarters of which is at W234 N2000 Ridgeview Parkway Court, Waukesha, Wisconsin.

3. ATC is filing this request for confidential handling with its application to the Public Service Commission of Wisconsin ("Commission") for the Mill Road-Granville Transmission Line Project ("Project"). The Project involves constructing a new greenfield Mill Rd Substation with a 345 Kilovolt (kV) six position ring bus, a 138 kV five position ring bus, and a 345 kV/138 kV autotransformer; rebuilding the existing double-circuit 345 kV

(9911)/138 kV (3444/and a portion of 36341) transmission lines as double-circuit 345 kV (W-42/W-43) transmission lines from the Mill Rd to Granville Substation; constructing a new 138 kV transmission line (X-196) from the Mill Rd Substation to the Tamarack Substation, constructing a new 138 kV transmission line (X-197) from the Tamarack Substation to the Butler Substation; modifying the existing Granville, Butler, and Tamarack Substations; modifying the existing 345 kV transmission lines: 9911 and L-CYP31; and modifying the existing 138 kV transmission lines: 2661, 36341, 3443, 3453, 5051 and 5061, as more fully described in the application.

4. To assess the need for the Project, ATC has conducted analyses of its system.

The subject of ATC's request for confidential handling contains the following:

- The planning support document;
- Final system impact study report – DPP 2020 Cycle;
- DPP 2020 Restudy NRIS Deliverability Results;
- Power flow models listed on Exhibit A.

Certain technical information in the aforementioned documents, as well as the power flow models, could be useful to someone planning an attack on ATC's critical energy infrastructure, and the information goes beyond the physical location of the facilities. Information of this type is considered Critical Energy Infrastructure Information ("CEII") under federal law, and ATC is bound to protect it. See FERC Orders No. 630, 68 Fed. Reg. 9857 (2003), and No. 683, 71 Fed. Reg. 58,273 (2006); 18 C.F.R. § 388.113. ATC has adopted a procedure entitled "Identification and Protection of CEII Materials" consistent with these legal requirements and has determined that the information in the document and models

includes CEIL. In accordance with this procedure, ATC is filing this information confidentially.

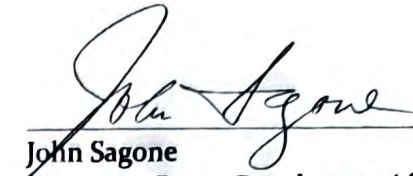
5. Holding confidential the information describing certain details of the electric transmission system supports the public interest in continued protection of the physical security of the electric transmission system and in maintaining a fair and competitive wholesale electric market that does not favor any particular market participant. Disclosure of this information may lead to the harm and diminishment of secure, equitable, and competitive energy markets in the State of Wisconsin.

6. Certain of the information in the aforementioned documents also contains business confidential information. This information should be treated as confidential information under Wis. Stat. § 134.90(1)(c), subch. II, Ch. 19 of the Wisconsin Statutes, and Wis. Admin. Code PSC § 2.12 because the information supplied by ATC contains information that is confidential, represents the trade secrets or proprietary business information of ATC or others and should therefore be protected from disclosure.

7. No public benefit extends from the disclosure of the aforementioned information. Any disclosure of this information would be to the potential detriment of the possessor and the general public.

8. ATC is providing this information to facilitate the Commission's review of the need for the Project and demonstrate that ATC's plans to address these energy needs are in the public interest.

9. The above and foregoing is true and correct to the best of my personal knowledge and belief.


John Sagone
Manager State Regulatory Affairs and
Associate General Counsel

Subscribed and sworn to before me this
22nd day of October, 2024

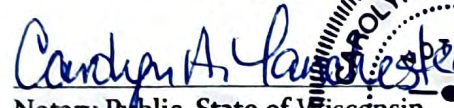
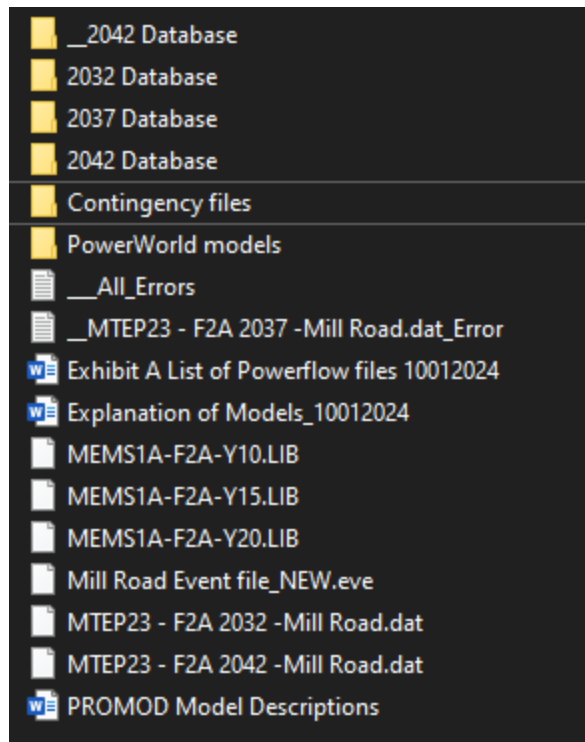

Notary Public, State of Wisconsin
My Commission ends: 31st October



Exhibit A



Appendix D Exhibit 1 Mill Rd-Granville 345 kV Project PSD_CONFIDENTIAL.pdf
This CEII was previously uploaded to the SFTP site on October 23, 2024.



MILL ROAD – GRANVILLE 345 KV PROJECT

Project Scoping Document

Planning Zone: 5

Version 1

Prepared By:
ATC System Planning

Approved By:
Tom Dagenais
Director System Planning

System Planning
October 15, 2024

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1. Executive Summary

The existing transmission facilities in the Western Milwaukee area have unique characteristics that contribute to limitations on the surrounding transmission system. The 345 kV network in the Western Milwaukee area creates an hourglass shape, with three 345 kV lines to the north and three 345 kV lines to the south of this geographic area. In the area between those lines, there are two 345 kV circuits and associated 138 kV facilities running in parallel, which have a relatively low capability to support high power flows during contingency situations.

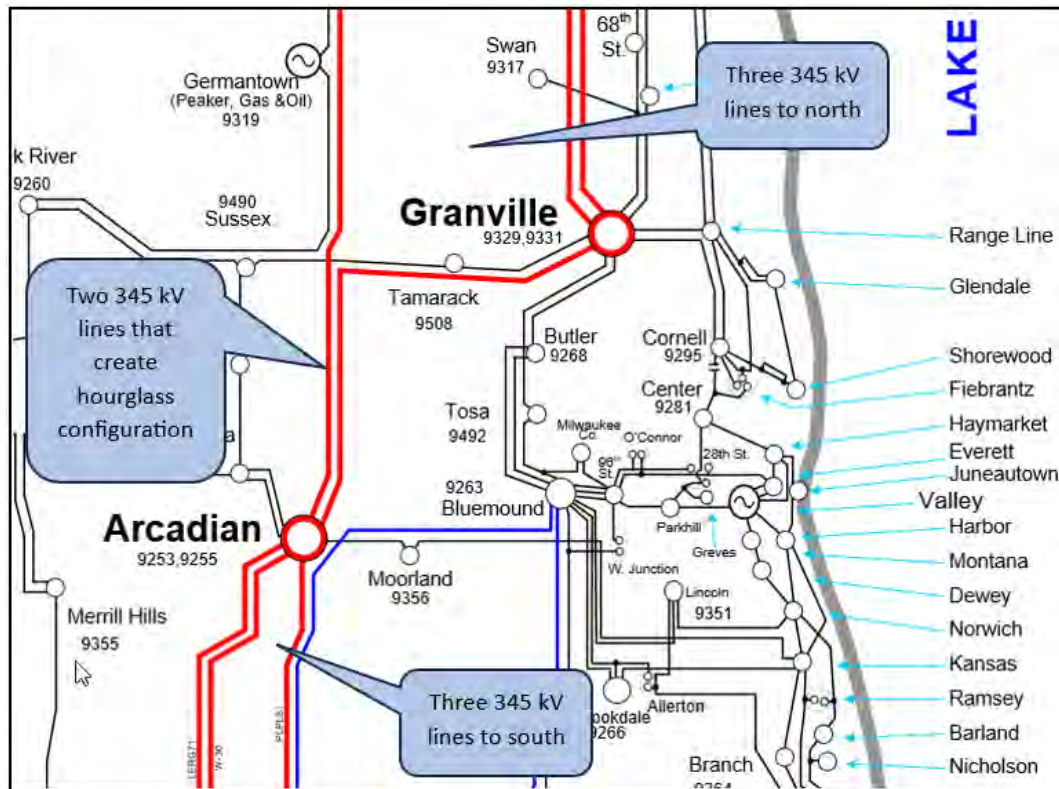


Figure 1.1: Western Milwaukee 345 kV Transmission Facilities

Given these unique conditions, the transmission system in the Western Milwaukee has been a historical focus area for ATC that ATC has monitored for many years. These conditions, combined with more recent system changes, have led ATC to propose the Mill Road – Granville 345 kV Project (the Project). As described more fully herein, there are three primary need drivers for the Project:

North American Reliability Corporation (NERC) TPL Reliability Standards: As demonstrated in recent Midcontinent Independent System Operator, Inc. (MISO) Transmission Expansion Plan (MTEP) annual assessments and the steady state reliability power flow analysis described herein, without reinforcements, the transmission system facilities in the Western Milwaukee area are expected to exceed thermal limits in single-event and multi-event contingency situations. In other words, the Western Milwaukee area needs transmission system reinforcements to continue to comply with NERC TPL reliability standards.

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Generator Interconnections: Various MISO Definitive Planning Phase (DPP) study limitations have shown that system reinforcements in this area are needed to support numerous generator interconnection requests, many of which are for new renewable generators located in Wisconsin.

Load Interconnections: We Energies has submitted multiple new large load interconnection requests associated with a new data center in southeast Wisconsin, the load for which is scheduled to come on-line in 2025 through 2027 and beyond, which will further stress the facilities in this area. The NERC TPL reliability issues occur in the Project area with or without the new We Energies load interconnections in southeast Wisconsin, but the issues are exacerbated by these load additions.

Additional Considerations: In addition to these three primary need drivers, there are various other considerations that contribute to the needs for system reinforcements:

- Transfer Capability – The Western Milwaukee area has experienced historical economic congestion because of its limited local and regional transfer capability. The transmission system reinforcements associated with the Project will help alleviate this local congestion.
- Asset Renewal – Many existing facilities in the area are approaching the end of their useful life and based on their age and condition, can be incorporated to optimize the Project scope.

This Project Scoping Document (PSD) explains the various need drivers for the Project, describes the prior MISO and ATC studies that have been completed in the area, documents the conclusions of ATC's planning analysis, and provides a detailed evaluation of two potential electrical alternatives for meeting the Project's stated need.

Based on this analysis, ATC determined that Alternative 1 is the preferred transmission alternative for meeting the Project's stated need. This alternative is described more fully later in the PSD, but generally speaking, consists of the following:

Substation Scope:

- Mill Road Substation – Construct a new substation with a 345 kV ring bus, a 138 kV ring bus, a 500 MVA 345/138 kV transformer, and a 10-ohm series reactor on the Sussex – Mill Road 138 kV line;
- Granville Substation – Replace an existing transformer with a new 500 MVA 345/138 kV transformer and add one 345 kV line terminal;
- Butler Substation – Reconfigure 138 kV line terminals and install a 10-ohm series reactor; and
- Tamarack Substation – Reconfigure 138 kV bus.

Transmission Line Scope:

- Rebuild the Granville – Arcadian 345 kV and Granville – Tamarack – Sussex 138 kV double circuit line to a double circuit 345 kV line between the Granville and Mill Road substations;
- Construct a new Mill Road – Tamarack – Butler 138 kV line;
- Upgrade the Arcadian – Mill Road 345 kV lines; and
- Reconnector the Mill Road – Germantown 138 kV line.

Alternative 2 includes many of the same components as Alternative 1, with the primary difference being that Alternative 1 utilizes a flow control device at the Butler Substation, while Alternative 2 rebuilds the 138 kV facilities in the Granville – Bluemound transmission corridor.

The cost estimate for Alternative 1 is \$424 million and the cost estimate for Alternative 2 is \$569 million.

ATC's power flow analysis shows that the two alternatives perform similarly to meet the NERC TPL reliability requirements and adequately address the system needs listed above. Both alternatives also provide additional benefits, including providing operational flexibility, increasing transfer capability, reducing market congestion and system losses, better coordination with future transmission expansion plans, and further enabling the reliable interconnection of new load and generation in Wisconsin.

Between the two alternatives, Alternative 1 has several advantages over Alternative 2. Specifically, Alternative 1 calls for installing a flow control device at the Butler Substation to effectively redirect power flow away from the historically congested Granville – Bluemound 138 kV transmission corridor and provide considerable relief from local constraints associated with the current “hourglass” configuration of the Western Milwaukee area transmission system, without committing a significant investment to rebuild the 138 kV facilities in this corridor. Moreover, Alternative 1 would require less new right-of-way, would have less social and environmental impact, would be lower in cost, and would have a greater ability to achieve the Project's targeted in-service date.

In sum, the transmission system in the Western Milwaukee area needs reinforcements to continue to comply with NERC TPL reliability standards, support the interconnection of new renewable generation in Wisconsin, provide adequate and reliable service to a large new data center in southeastern Wisconsin, and improve transfer capability and operation flexibility. ATC's System Planning department recommends Alternative 1 as the preferred alternative for meeting these needs.

2. Introduction

The purpose of this Project Scoping Document is to define the planning study area, document background information about the existing electric system, analyze the need for the proposed project, describe the alternatives considered, discuss why the preferred alternative was selected, outline the scope of the preferred project, and discuss other considerations that need to be addressed at this time.

3. Project Need

The Western Milwaukee study area for this project has been a historical focus area that ATC has monitored for many years. Recently identified needs and considerations have brought this area to the forefront of ATC's planning study efforts. Below is a summary of the various multifaceted system needs supporting the project:

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- System reliability – Recent MISO MTEP analyses have observed issues with overloaded transmission facilities in this area. A significant amount of new load associated with a new data center is expected to come online in southeast Wisconsin by 2027, which will exacerbate these issues.
- Generator interconnections – Various MISO DPP study limitations have shown that the Project is needed to support the interconnection of new renewable generators, most of which are located in Wisconsin.
- Load interconnections – We Energies has submitted multiple new large load interconnection requests in southeast Wisconsin that are scheduled to come online between 2025 and 2027 and beyond, which will further stress the system in this area.
- Transfer capability – This area has experienced historical economic congestion because of its limited local and regional transfer capability. The Project will help to alleviate this congestion.
- Asset renewal – Many existing transmission facilities in the Project area are older and, based on their age and condition, need to be considered when optimizing the scope of the Project.

3.1 Study Area Reliability Assessments

The purpose of this section is to present and document the need for transmission system reinforcement by presenting results of recent planning studies, identifying unique load and generation characteristics in the study area, describing planned asset management projects, and providing a high-level summary of existing Special Protection Systems, Operating Guides, and System Control Operator (SCO) Reference Guides within the planning study area. Examination of this information indicates that the planning study area has deficiencies that clearly require transmission system reinforcements.

Fundamentally, power flows from the generation resources to the load via the networked transmission facilities. Therefore, generation, load, and the networked transmission facilities were all key inputs into this study.

3.1.1 Transmission System Characteristics

The full study area for this analysis is defined as southeast Wisconsin, which is illustrated in the map in Appendix D, Figure D.1 (hereinafter referred to as the “Full Study Area”). This study area will be used as a general guide for monitoring the transmission facilities impacted by the power flow analysis. The Focused Study Area for this analysis is defined as the “Western Milwaukee” area, which is illustrated in the map in Appendix D, Figure D.2 (hereinafter referred to as “Focused Study Area”). This Western Milwaukee area has some unique characteristics that contribute to the system limitations in the area.

The key transmission facilities within the Western Milwaukee area include the Granville and Arcadian 345/138 kV substations. From the north, there are three 345 kV lines connecting to the Focused Study Area: the Cypress – Arcadian 345 kV line, the Sheboygan Energy Center– Granville 345 kV line, and Saukville – Granville- 345 kV line. Additionally, there are three 345 kV lines connecting the Focused Study Area to the south: Arcadian – Jupiter 345 kV circuits 1 & 2 and the Arcadian – Elm Road 345 kV line. Between the northern and southern portions of the Focused Study Area are two 345 kV lines: the Granville – Arcadian 345 kV line and the Cypress – Arcadian 345 kV line.

This 345 kV system configuration creates a constraint similar to the shape of an “hourglass,” or bottleneck, for 345 kV system power transfers across the ATC footprint in southeast Wisconsin. There are no north-to-south 345 kV network connections east of the Focused Study Area, nor are there any such connections to the west until the Madison to Beloit/Janesville area. Therefore, there are limited routes to which power flows can transfer under system contingencies.

Another key characteristic of existing transmission facilities is that this Focused Study Area consists of the 345 kV facilities that connect the backbone of the eastern Wisconsin 345 kV network. On a [REDACTED], and power then is pushed to flow on the underlying 138 kV facilities—which ultimately results in limitations on the parallel underlying 138 kV lines. The non-345 kV system cannot transfer as much power as the 345 kV system; therefore, any contingency or outage of 345 kV lines inhibits the maximum transfer capability to southeast Wisconsin.

MISO’s annual MTEP assessment has identified limitations on the 138 kV facilities within the Granville – Bluemound 138 kV corridor, which first surfaced in MISO’s MTEP23 multiple event (P6) study results. Specifically, [REDACTED] resulted in the overload of Granville – Tosa 138 kV line (3443). This overload could be mitigated with generation redispatch. As a proactive measure, ATC developed a preliminary version of the Mill Road – Granville project to address these new limitations and submitted this as a placeholder into MISO MTEP23 Appendix B (ID 24919).

The limitations in this 138 kV corridor again surfaced in MISO’s MTEP24 annual assessment. Not only were the previous multiple event contingencies (P6) exacerbated, but in addition, new single event contingencies (P7) appeared. The [REDACTED] resulted in the overload of the Butler – Bluemound 138 kV line (5051). These results indicate that mitigation options are no longer sufficient, and ATC started to develop corrective action plans to address these limitations.

3.1.2 Recent and Ongoing Planning Studies

ATC and MISO have completed numerous recent studies that are relevant to the Project and also have ongoing planning studies in various stages of development to address multiple system needs in and around the Western Milwaukee area, including increasing regional transfer capability, improving local reliability issues, interconnecting new load and generation, and asset renewal needs. In

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conducting its analysis for the Project, ATC considered the following completed studies and ongoing analyses to ensure all proposed solutions are optimized and coordinated:

- Oak Creek Generation Retirement and Replacement Studies – MISO conducted a study and approved the retirement of the Oak Creek coal fired generation in 2022. Earlier this year, We Energies submitted the Oak Creek generation replacement project to the Public Service Commission of Wisconsin (PSCW or Commission) (Docket No. 6630-CE-317) to replace the existing coal generation units with gas combustion turbines. MISO is performing this replacement study at the time of this report.
- Elm Road Point of Interconnection (POI) Relocation Study – MISO and ATC approved We Energies' Generator Facility Modification Request to relocate the Elm Road generation station auxiliary transformer POIs. ATC submitted an application for a Certificate of Authority (CA) to the Commission on August 8, 2024 (Docket No. 137-CE-211) to expand the Elm Rd Substation 345 kV breaker-and-a-half bus configuration with three rungs and relocate the existing Elm Road generation/station auxiliary transformer POIs.
- Racine County "Western Feed Transmission Line" Project Study – We Energies submitted multiple load interconnection requests to ATC, which comprising a cumulative [REDACTED] of new load associated with a new data center being constructed in the Electronics and Information Technology Manufacturing (EITM) zone in the Village of Mount Pleasant, Wisconsin. On July 12, 2024, ATC submitted an application for a Certificate of Public Convenience and Necessity (CPCN) to the Commission (Docket No. 137-CE-209) to construct new 345 kV transmission lines, which are the first in a series of network upgrades required to serve the new load addition.
- Elkhorn – North Lake Geneva Area Study – In its DPP 2020 study cycle, MISO initially identified a need to increase the capability of an existing 138 kV transmission line. ATC's studies for interconnecting the new data center load in the EITM zone have also identified this same need as well as others in this study area. The studies for this area have recently been completed and submitted proposed solutions to MISO for MTEP25, Target Appendix A. The solutions are of smaller scope and do not require a CPCN or CA from the Commission.

On-going Planning Studies

- Oak Creek/Elm Road Outlet Study – MISO has identified a need for a new 345 kV line between the Elm Road and Racine Substations as part of its Long Range Transmission Plan (LRTP) Tranche 2 portfolio and the DPP 2020 cycle generation interconnection studies, which will allow for higher power transfer through this transmission corridor. ATC's studies for interconnecting the new data center load in the EITM zone have also identified a need for additional transfer capability within this same corridor. MISO is scheduled to complete its LRTP Tranche 2 study by the end of 2024 and have completed the 2020 DPP study on May 4, 2024. At this time, ATC is tentatively planning to submit a CPCN application to the Commission for this project in early 2025.
- Southeastern Wisconsin – Northern Illinois Study (MISO DPP) – The need for the proposed Rosecrans Substation and associated transmission line work between the ATC and

Commonwealth Edison transmission systems has been identified in MISO's DPP 2021 study cycle. MISO's anticipated timeline to complete the DPP studies is late 2024. MISO's final LRTP Tranche 2 portfolio may impact the final need for the Rosecrans project.

- Cypress Area 345 kV Uprate Study – The need for additional 345 kV capacity north of the Focused Study Area was identified in the ongoing MISO's DPP 2021 study cycle. ATC has also identified economic benefits associated with additional 345 kV capacity in this area that further support new load and generation interconnections in southeast Wisconsin.
- Milwaukee 230 kV Conversion/Reconfiguration Study – MISO is currently evaluating this 230 kV to 345 kV voltage conversion project as part of its LRTP Tranche 2 study and the scope is being combined with an upcoming asset renewal need driver. ATC tentatively anticipates submitting a CPCN application to the Commission for this project in 2025.
- MISO LRTP Tranche 2 Studies – These studies are a key initiative of MISO's Reliability Imperative, which is designed to improve the ability to move electricity across the MISO region. LRTP Tranche 2 proposes several new 345 kV and 765 kV facilities in the Full Study Area.

3.1.3 Loads and Forecasts

The study area consists of the highest load density in Wisconsin. Specifically, the Focused Study Area has a peak load of approximately 1 GW. As shown in Figure B.2 of Appendix B, based on the 2023 coincident peak forecast information provided by Wisconsin Load Serving Entities (LSE), the forecasted load growth rate within the Focused Study Area is flat for 2024-2033. Figure B.1 depicts the actual historical coincident load data received from the LSEs through 2023 and forecasted coincident load data from 2024 and beyond.

While there currently is no future forecasted load growth in the study area, there are recent spot load additions outside of the annual load forecast process. We Energies' submission of multiple load interconnection requests to connect a total of [REDACTED] of new load in the EITM zone in the Village of Mount Pleasant will impact the study area. The end-use customer will be placing this new load in-service starting in April 2025 through January 2027 and beyond. Due to the size of the load, We Energies existing distribution infrastructure cannot serve the load.

On July 12, 2024, ATC submitted a CPCN application to the Commission for the Racine County Western Feed Transmission Lines Project (Docket #137-CE-209), which is the first in a series of network upgrades needed to adequately and reliably serve this large new load addition. ATC noted in that the Racine County Western Feed Transmission Lines Project will not address all system limitations caused by these significant load additions. The Mill Road – Granville 345 kV Project will be the second network upgrade needed to address the system limitations specifically identified in the western Milwaukee area.

3.1.4 Generation

The key generation in and near the planning study area includes:

- **Germantown, Units 1–5:** These units are simple cycle gas-fired units that generate a total of [REDACTED] and are a key resource for providing area load serving capability, voltage control,

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and black start support. There is an existing operating guide to curtail the Germantown units for system stability issues, and eliminating or reducing the need for this operating guide would be beneficial because it would simplify and streamline the real-time operation of the system in this area.

- **Port Washington, Units 1&2:** These units are gas-fired combined cycle steam units that generate a total of [REDACTED]. Addressing transmission limitations in this corridor will help provide a more economic dispatch of these units.
- **Valley, Units 1&2:** These units are natural gas steam turbines generating a total of [REDACTED] in downtown Milwaukee. The Valley units are a key resource for providing load serving capability and voltage support for the Milwaukee load pocket.
- **Oak Creek, Units 5–8:** The original Oak Creek generation units consisted of four coal-fired units generating a total of [REDACTED]. We Energies is in the process of retiring the coal-fired units and replacing them with five natural gas combustion turbines (CT). Each new CT is [REDACTED], meaning the repowered plant will provide a total of [REDACTED] of generating capacity.
- **Elm Road, Units 1&2:** These are coal-fired steam turbines generating a total of 1,369.5 MW and are adjacent to the Oak Creek generation plant.

The Oak Creek and Elm Road generators support the greater Milwaukee area and are tightly connected to the 345 kV and 138 kV networks in the study area. [REDACTED]
[REDACTED]
[REDACTED]

3.1.4.1 MISO Generation Interconnection Studies

MISO's generation interconnection process evaluates and approves the addition of new resources into the MISO-controlled transmission network. MISO operates its generator interconnection queue with a cluster study model, meaning that a group of new generating resource projects submitted in the same cluster are studied and move through the queue process together. The process is broken down into three Definitive Planning Phases (DPP), followed by a fourth stage where MISO negotiates and executes a Generation Interconnection Agreement (GIA) with each resource.

MISO's DPP 2020 Cycle has identified system limitations in the Western Milwaukee area due to new generation resources being sited north and west of the study area, which exacerbates the existing north-to-south power flow. MISO has identified the Project as a required network upgrade to address these limitations. MISO has also listed the Project as a required network upgrade for fourteen executed GIAs. For more detail, see MISO's DPP 2020 Cycle East (ATC) Area Restudy Report.¹

¹ See report on <https://www.misoenergy.org>. Go to Planning -> Generator Interconnection Studies and Procedures -> Definitive Planning Phase (DPP) -> 2020 Cycle -> ATC -> GI-DPP-2020-ATC-Restudy_System_Impact_Study_Final_PUBLIC_10252023.zip

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MISO's ongoing DPP 2021 Cycle Study also shows that system limitations in the Western Milwaukee area are further exacerbated. With these limitations showing up in multiple MISO generation queues, it demonstrates the continued and increasing need of this Project.

3.1.5 Asset Renewal Considerations

There are older transmission facilities within the study area that should be considered when developing the scope of the alternatives. However, age is not the sole driving factor when considering the replacement of an existing facility. The condition of the facility should be the key focus when evaluating the timing of the asset renewal project. Although asset renewal is not identified as a primary need driver of this Project, when combined with other needs identified in this PSD, it optimizes the scope of the Project.

There are two larger asset renewal projects within the Focused Study Area that have recently been approved by the Commission and are in various stages of implementation:

- Arcadian Substation Asset Renewal Project (Docket #137-CE-192) (Targeted ISD = 2024)
- Granville Substation Asset Renewal Project (Docket #137-CE-198) (Targeted ISD = 2025)

To the extent that the alternatives involve portions of ATC system that have older transmission facilities, the condition of these facilities are being reviewed to optimize the development of the alternative solutions. Identified below are the vintages of the older assets within the study area.

- Granville – Arcadian 345 kV line (9911):
 - Average structures are 1960s vintage
- Granville – Tamarack 138 kV line (3444):
 - Average structures are 1970s vintage
- Granville – Butler 138 kV line (3453):
 - Original steel lattice towers are 1940s vintage
- Granville – Tosa 138 kV line (3443):
 - Original steel lattice towers are 1940s vintage
- Butler – Bluemound 138 kV line (5051):
 - Original steel lattice towers are 1920s vintage
 - Conductor replaced in 1950s
- Butler – Bluemound 138 kV line (5061):
 - Original steel lattice towers are 1940s vintage
- Tosa – Milwaukee County Tap – Bluemound 138 kV line (5041):
 - Original steel lattice towers are 1940s vintage

3.1.6 Transfer Capability

Transfer capability is a measure of the ability of transmission system to move power reliably and economically from one area to another across all transmission facilities. The existing transmission facilities between the Granville and Bluemound corridor can limit the north-to-south power flow through ATC's system. This corridor can also limit the west-to-east power flow on a larger regional

scale across MISO's transmission system. Limited transfer capability can have adverse reliability and economic impacts.

The following are key lines that have historically had limited transfer capability:

- Granville – Butler 138 kV line (3453)
- Granville – Tosa 138 kV line (3443)
- Butler – Bluemound 138 kV line (5051)
- Butler – Bluemound 138 kV line (5061)
- Tosa – Milwaukee County Tap - Bluemound 138 kV line (5041)

Even though transfer capability is not a primary need driver of the Project, it is desirable to reduce local limitations in this north-to-south corridor compared to historical levels and allow for an increased transfer capability through the Western Milwaukee area.

3.1.7 Standing Special Protection Systems and Operating Guides

The Germantown units currently have an operating guide to limit [REDACTED] Germantown generation output due to NERC Category P6 contingency stability concerns. The Germantown operating guide would need to be restudied given the benefits the proposed network changes associated with the Project would provide. Lowering the restrictions on the output from the Germantown generation or eliminating the operating guide is a potential benefit, but is not a direct need driver for this Project.

There are no standing Remedial Action Schemes (RAS) in the study area.

3.2 Power Flow Analysis

ATC performed a contingency analysis for the existing system on the study-specific models, as described in Appendix C of this document. The system alternatives discussed in Section 4 were not included in the models for the power flow analysis described in this section. ATC used steady state analysis to assess the impacts of NERC TPL-001 reliability standard at voltage levels 69 kV and above.

The NERC TPL-001 reliability standard states that the transmission system shall be assessed under various system normal and contingency conditions. The ATC Planning Criteria generally states that, under system normal conditions (NERC TPL Cat. P0), all voltages must remain between 0.95 per unit and 1.05 per unit and all facility loadings must remain below their normal ratings. Additionally, ATC Planning Criteria generally states that, under contingency conditions (NERC TPL Cat. P1 – P7), all voltages must remain between 0.90 per unit and 1.10 per unit and all facility loadings must remain below their two-hour emergency ratings.

3.2.1 NERC TPL-001 Analysis – System Intact Simulations

The NERC TPL-001 system intact category is:

- P0 – all facilities in service

For the Focused Study Area, the NERC TPL-001 system intact simulations did not identify any thermal or voltage limitations in any of the study models.

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For the Full Study Area, the NERC TPL-001 system intact simulations did not identify any voltage limitations in any of the study models, but did identify the following system intact thermal limitations:

- The [REDACTED] is at 106.2% loading in the 2028 Light Load study model.
- The [REDACTED] is at 107.5 % loading and the [REDACTED] is at 100.7% loading in the 2033 Summer Peak study model.

3.2.2 NERC TPL-001 Analysis – Single Event Simulations

The NERC TPL-001 contingency categories that are focused on single event contingencies are:

- P1 – An event resulting in the loss of a single element (generator, transmission circuit, transformer, shunt device, single pole of a DC line)
- P2 – An event resulting in the loss of a single element (opening a line section without a fault, extra high voltage (EHV) bus section fault, EHV non-bus tie breaker fault)
- P4 – For steady state power flow simulations, P4 EHV defined contingencies are covered by P2s.
- P5 – For steady state power flow simulations, P5.1 – P5.4 defined contingencies are covered by P1s and P2s; all P5.5 contingencies will be simulated.
- P7 – An event resulting in the loss of any two adjacent circuits on a common structure.

Specifically, system reinforcement is required if any one of the following conditions are met:

- Two-hour emergency ratings are exceeded;
- Voltages are below 0.9 per unit and cannot be mitigated by using automatic adjustments; or
- Voltages are above 1.1 per unit and cannot be mitigated by using automatic adjustments.

Instability, cascading, or voltage and system flows outside appropriate limits resulting from the contingencies described above would generally drive the need to develop a solution. Operator-initiated system adjustments or load shed are not acceptable mitigation procedures for single contingency events—only automatic adjustments can be utilized post-contingency.

For further details regarding study assumptions, criteria, and methodology, please refer to Appendix C.

The following is a summary of the study results for the single event simulations (P1, P2, P5.5, P7) for the Focused Study Area:

3.2.2.1 2028 Summer Peak Basecase

- There are multiple thermal limitations due to P1, P2 and P7 events;
- There are no P5.5 thermal limitations; and
- There are no voltage limitations.

3.2.2.2 2033 Summer Peak Basecase

- There are multiple thermal limitations due to P1, P2, P5.5, and P7 events; and
- There are no voltage limitations.

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3.2.2.3 2028 Shoulder Basecase

- There are no thermal or voltage limitations.

3.2.2.4 2028 Light Load Basecase

- There are multiple thermal limitations due to P7 events, one P2 event limitation;
- There are no P1 and P5.5 thermal limitations; and
- There are no voltage limitations.

3.2.2.5 Conclusions for Single Event Simulations

The tables below illustrate the number of thermal or voltage limitations that occurred before the proposed Project is implemented. It does not illustrate the number of contingencies that resulted in these limitations.

In reviewing Table 3.2.1, these limitations must be addressed with the proposed Project because generation redispatch is not an acceptable mitigation for single event contingencies. Table 3.2.1 is a subset of Table 3.2.2 for the purpose of comparing limitations for the Focused Study Area and the Full Study Area.

Below is a list of key facilities that resulted in thermal limitations in the Focused Study Area.

■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]

The worst single event contingency is a [REDACTED], which results in the Butler – Bluemound 138 kV line (5051) overload of 140.1% in the 2028 Summer Peak model. This contingency is also a significant limitation in the 2033 Summer Peak and 2028 Shoulder models.

An additional critical single event contingency is a [REDACTED], which results in the Butler – Bluemound 138 kV line (5061) overload of 133.1 % and other overloaded facilities in the 2028 Summer Peak model. This contingency is also a significant limitation in the 2033 Summer Peak model.

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Table 3.2.1
Summary of Single Event Simulations – Thermal Limitation Results
Focused Study Area facilities

NERC Contingency	Study Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P1	9	6	0	0	Appendix E, Table E2
P2	26	27	1	0	Appendix E, Table E2
P5.5	0	0	0	0	Appendix E, Table E2
P7	14	16	10	0	Appendix E, Table E2

Table 3.2.2
Summary of Single Event Simulations – Thermal Limitation Results
Full Study Area Facilities

NERC Contingency	Study Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P1	23	78	9	12	Appendix E, Table E2
P2	76	105	33	3	Appendix E, Table E2
P5.5	1	2	0	0	Appendix E, Table E2
P7	19	29	11	4	Appendix E, Table E2

Of the two P5.5 limitations noted in table 3.2.2, one will be fixed by the Oak Creek and Racine Substation Asset Renewal project, MTEPID 21629. The other limitation is still being assessed.

For voltage results, the Focused Study Area and Full Study Area results are shown in the tables below. The Full Study Area limitations are related to the Hubbard Load Tap Changer (LTC), which has an associated reverse power flow scheme that cannot be modelled in steady state analysis. Refer to Appendix E for the comprehensive voltage results for the Full Study Area.

Table 3.2.3
Summary of Single Event Contingency – Voltage Limitation Results
Focused Study Area Facilities

NERC Contingency	Seasonal Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P1	0	0	0	0	Appendix E, Table E2
P2	0	0	0	0	Appendix E, Table E2

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P5.5	0	0	0	0	Appendix E, Table E2
P7	0	0	0	0	Appendix E, Table E2

Table 3.2.4
Summary of Single Event Contingency – Voltage Limitation Results
Full Study Area Facilities

NERC Contingency	Seasonal Case				Appendix Table Reference
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
P1	0	0	0	0	Appendix E, Table E2
P2	20	20	20	0	Appendix E, Table E2
P5.5	0	0	0	0	Appendix E, Table E2
P7	0	0	0	0	Appendix E, Table E2

3.2.3 NERC TPL-001 Analysis – Multiple Event Simulations

NERC TPL-001 multiple event contingency categories include the following events for facilities 100 kV and above (unless otherwise noted):

- P3 – A loss of generator unit (P1.1), followed by system adjustments, and then followed by Category P1.2, P.1.3, or P.1.4 event.
- P6 – A P1.2, P.1.3, or P.1.4 event, followed by system adjustments, and then followed by Category P1.2, P.1.3, or P.1.4 event.

For further details regarding contingency types, please refer to Appendix C.3.1.

The following is a summary of the study results for the multiple event simulations (P3 and P6) for the Focused Study Area:

3.2.3.1 2028 Summer Peak Basecase

- P3 - There were over 130 limitations and the worst thermal limitations involved the outage of the [REDACTED].
- P6 - There were over 500 limitations. The worst thermal limitations involved the [REDACTED]
[REDACTED]
[REDACTED].
- There are no voltage limitations for the P3 and P6 simulations.

3.2.3.2 2033 Summer Peak Basecase

- P3 - There were over 140 limitations and the worst thermal limitations involved the outage of [REDACTED].
- P6 - There were over 530 limitations. The worst thermal limitations involved the [REDACTED]
[REDACTED]
[REDACTED]
- There are no voltage limitations for the P3 and P6 simulations.

3.2.3.3 2028 Shoulder Basecase

- P3 - There were two limitations and the worst thermal limitations involved the outage of [REDACTED].
- P6 - There were over 50 limitations and the worst thermal limitations involved the [REDACTED]
[REDACTED].
- There are no voltage limitations for the P3 and P6 simulations.

3.2.3.4 2028 Light Load Basecase

- P3 - There was one limitation involved the outage of [REDACTED]
[REDACTED].
- P6 - There were over 20 limitations. The worst thermal limitations involved the outage of the [REDACTED]
[REDACTED]
[REDACTED]
- There are no voltage limitations for the P3 and P6 simulations.

3.2.3.5 Conclusions for Multiple Event Simulations

The tables below illustrate the number of thermal or voltage limitations that occurred before the proposed Project is implemented. It does not illustrate the number of contingencies that resulted in these limitations.

Reviewing Table 3.2.5 below, the key seasonal case(s) are the Summer Peak scenarios. In the Summer Peak scenario, most of the available generation resources are online to supply the load. In summary, these multiple event limitations are a priority that needs to be addressed because of the limited available generation redispatch options. Table 3.2.5 is a subset of table 3.2.6, which shows that a solution to address the Focused Study Area limitations may still leave additional system limitations that are yet to be resolved. The review of the Focused Study Area facilities reveals that the following facilities have limitations, which is a list that has a number of similar facilities as seen in the Single Event evaluations:

■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]

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■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]
■	[REDACTED]

The worst multiple event contingency is a P6 outage of the [REDACTED] [REDACTED], which results in the Granville – Tosa 138 kV line (3443) overload of 176.8% in the 2028 Summer Peak model. This contingency is also a significant limitation in the 2033 Summer Peak and 2028 Shoulder models.

The same limitations and associated contingencies were observed across all models. Therefore, the solution that addresses the worst-case limitations should address all remaining limitations in the Focused Study Area.

Regarding voltage reporting the Full Study Area limitations are the same for all seasonal models, which are related to the Hubbard LTC, and local low voltage situations that are addressed with supervisory and/or automatic control actions.

Table 3.2.5
Summary of Multiple Event Contingency – Thermal Limitation Results
Focused Study Area

NERC Contingency	Seasonal Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P3	137	142	2	0	Appendix E, Table E3
P6	510	535	50	24	Appendix E, Table E4

Table 3.2.6
Summary of Multiple Event Contingency – Thermal Limitation Results
Full Study Area

NERC Contingency	Seasonal Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P3	257	384	35	18	Appendix E, Table E3
P6	1083	1268	298	98	Appendix E, Table E4

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Table 3.2.7
Summary of Multiple Event Contingency – Voltage Limitation Results
Focused Study Area

NERC Contingency	Seasonal Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P3	0	0	0	0	Appendix E, Table E3
P6	0	0	0	0	Appendix E, Table E4

Table 3.2.8
Summary of Multiple Event Contingency – Voltage Limitation Results
Full Study Area

NERC Contingency	Seasonal Case				
	2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
P3	0	0	0	0	Appendix E, Table E3
P6	14	26	0	0	Appendix E, Table E4

3.2.4 NERC TPL-001 Analysis – Extreme Events

NERC TPL Planning Standard does not require system reinforcements and ATC does not normally implement reinforcements, for extreme event scenarios. As a result, these simulations were not performed as part of the needs analyses.

3.3 Sensitivity Analysis – Elm Road Generation Offline

This sensitivity analysis utilized the 2028 Shoulder model with an Elm Road unit offline to simulate a generator in a planned maintenance outage. The peak models were not utilized in the sensitivity analysis because maintenance outages typically occur during shoulder load levels.

3.3.1 NERC TPL-001 Analysis – System Intact Simulations

The NERC TPL-001 system intact category is:

- P0 – all facilities in service.

The NERC TPL-001 system intact simulations did not identify any thermal or voltage limitations in any of the models studied.

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3.3.2 NERC TPL-001 Analysis – Single Event Simulations

The following is a summary of the study results for the single event simulations (P1, P2, P5.5, P7) for the Focused Study Area:

3.3.2.1 2028 Shoulder Model – Elm Road Unit Offline

- There are multiple thermal limitations due to P1, P2 and P7 events;
- There are no P5.5 thermal limitations; and
- There are no voltage limitations.

3.3.3 NERC TPL-001 Analysis – Multiple Event Simulations

The following is a summary of the study results for the multiple event simulations (P3 and P6) for the Focused Study Area:

3.3.3.1 2028 Shoulder Model – Elm Road Unit Offline

- P3 - There were over 50 limitations and the worst thermal limitations involved the outage of the [REDACTED].
- P6 - There were over 240 limitations. The worst thermal limitations involved the [REDACTED] [REDACTED], resulting in a Butler – Bluemound 138 kV line (5061) limitation of 175% overload.
- There are no voltage limitations for the P3 and P6 simulations.

3.3.4 Conclusions for Sensitivity Analysis

As compared to the base 2028 Shoulder model that had no observed limitations, the Elm Road Unit outage scenario caused thermal limitations in the Focused Study Area. The key reason is that the loss of output of [REDACTED] needs to be replaced by importing generation from the MISO market, which results in higher north-to-south flow through the Focused Study Area.

The worst single event contingency is the [REDACTED], which results in the Butler – Bluemound 138 kV line (5061) overload of 141.6 % in the 2028 Shoulder model.

Table 3.3.1
Summary of Single Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	2	Appendix E, Table E2.5.1
P2	17	Appendix E, Table E2.5.1
P5.5	0	Appendix E, Table E2.5.1
P7	14	Appendix E, Table E2.5.1

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Table 3.3.2
Summary of Single Event Contingency – Voltage Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	0	Appendix E, Table E2.5.2
P2	0	Appendix E, Table E2.5.2
P5.5	0	Appendix E, Table E2.5.2
P7	0	Appendix E, Table E2.5.2

The worst multiple event contingency is a [REDACTED], which results in the Butler – Bluemound 138 kV line (5061) overload of 175.1% in the 2028 Shoulder model.

Another significant multiple event contingency is a [REDACTED], which results in the Butler – Bluemound 138 kV line (5061) overload of 123.5 % in the 2028 Shoulder model.

However, mitigation is allowed in either the P3 or P6 situation by generation redispatch or system adjustments prior to the second contingency.

Table 3.3.3
Summary of Multiple Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	53	Appendix E, Table E3.5.1
P6	246	Appendix E, Table E4.5.1

Table 3.3.4
Summary of Multiple Event Contingency – Thermal Results
Full Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	118	Appendix E, Table E3.5.1
P6	629	Appendix E, Table E4.5.1

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There are no multiple event contingency voltage results for the Focused Study Area. The Full Study Area voltage results for this sensitivity are the same events as seen in the base 2028 Shoulder case, See Table E3.5.2 and E4.5.2 for detailed information.

3.4 Economic Need Drivers

The Focused Study Area contains multiple lines that have been historically constrained from an economic perspective. The existing 138 kV transmission facilities in the Granville and Bluemound corridor are and have been a limiter for the north-to-south power flow through ATC's system. This corridor can also limit the west-to-east power flow on a larger regional scale in MISO's western and central transmission system. The following are key historically constrained lines in the Focused Study Area:

- Granville – Butler 138 kV line (3453)
- Granville – Tosa 138 kV line (3443)
- Tosa – Milwaukee County Tap - Bluemound 138 kV line (5041)
- Butler – Bluemound 138 kV line (5051)
- Butler – Bluemound 138 kV line (5061)

Congestion is measured in two ways in the MISO market: hours of occurrence and shadow price. The hours of occurrence reference how often in the year the congestion happens. Shadow price is the increased cost associated with having to redispatch the generation around the constraint. For this Project, ATC will utilize the hours of constraint occurrence for monitoring congestion levels. Table 3.4.1 shows historical congestion hours in the planning study area.

Table 3.4.1
Historical Hours of Congestion

Constraint	Contingency	Hours of Congestion during Year				Total
		2020	2021	2022	2023	
Bluemound - Butler 138 kV (5051)		90	0	0	0	180
Bluemound - Butler 138 kV (5051)		0	71	0	0	71
Bluemound - Butler 138 kV (5061)		286	78	861	121	1553
Bluemound - Butler 138 kV (5061)		98	2	16	277	490
Bluemound - Butler 138 kV (5061)		3	0	0	0	6
Bluemound - Butler 138 kV (5061)		22	0	0	0	45
Bluemound - Tosa 138 kV (5041)		0	0	7	0	7
Butler - Granville 138 kV (3453)		98	0	0	0	122
Granville - Tosa 138 kV (3443)		4	0	188	0	269
Granville - Tosa 138 kV (3443)		266	30	285	71	887
Annual Total		876	181	1357	469	N/A

The total congestion hours for each year ranged from 469 to 1,357 hours, which is approximately five to 15 percent of the total year. This results in MISO redispatching more expensive generation around

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this corridor for at least five percent of the year to mitigate these constraints. These numbers reflect historical congestion and do not reflect any impacts of any future changes, including the proposed load additions in the EITM zone in Racine County.

Currently, MISO redispatches the [REDACTED] to mitigate these key historical constraints. This results in increasing the generation at [REDACTED], which is generally uneconomic and contrary to environmental preferences. Any project implemented should reduce these key constraints sufficiently such that generation can reliably and economically serve all Milwaukee area load.

Even though economics is not a primary need driver of this Project, it is desirable to reduce local area congestion in this north-to-south corridor compared to historical levels, allowing for increased transfer capability through the Western Milwaukee area.

3.5 Summary of Analysis and Need Drivers

This project is needed to meet NERC reliability standards. But the planning study area also possesses unique characteristics that contribute to the need for additional transmission facilities.

As mentioned in Section 3.1.1, the transmission facilities within the Focused Study Area create an “hourglass” formation with three 345 kV lines on the north and south sides of the Focused Study Area. In the middle are two 345 kV circuits and the associated parallel path 138 kV facilities, which have a relatively low capability to support future expected high power flows during contingency events. The key contingencies that result in the most impact are:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

In summary, from a reliability perspective alone, there are many contingency events that may occur across all periods of the year that require a solution by NERC requirements. These identified limitations also impact the capability to interconnect new generation and new loads proposed in the southeast Wisconsin area.

Finally, as discussed elsewhere in this PSD, there are additional need considerations such as, but not limited to: transfer capability, congestion, asset renewal, and operational flexibility and guides.

4. System Alternatives

This section presents system alternatives, including the proposed Project, that address the needs identified in Section 3. Route alternatives should not be confused with system alternatives. Route alternatives differ from system alternatives because routes reflect different physical paths to connect a transmission line between the same two endpoints. No route alternatives are discussed in this

document. The geographical diagrams representing the alternatives in this section are not necessarily indicative of proposed routes.

ATC considered several reinforcement options to address the reliability needs within the planning study area. Of these, only the best performing reinforcements that would address all of the Focused Study Area limitations will be discussed in this section as alternatives. The other reinforcement options that were evaluated but not considered as viable system alternatives are outlined in Section 4.3. In the study area, the limiting and contingent transmission facilities involved both the 138 kV and 345 kV voltage classes. Therefore, ATC evaluated solutions that considered both voltage classes to optimize the alternatives included in this study.

To create the models used in the alternatives analysis, power flow models utilized in Section 3.2 were used as a starting point. Comprehensive alternative comparison tables can be found in Appendix E.

4.1 Alternative #1: New Mill Road 345/138 kV substation with new 345 kV line and 138 kV system reconfiguration

The scope of this alternative includes the following key transmission facilities and is further defined in the Project Diagram shown in Appendix A Figure A1.

Substation Scope

- Mill Road Substation – Construct a new substation with a 345 kV ring bus, a 138 kV ring bus, a 500 MVA 345/138 kV transformer, and a 10-ohm series reactor on the Sussex – Mill Road 138 kV line.
- Granville Substation – Replace an existing transformer with a new 500 MVA 345/138 kV transformer and add one 345 kV line terminal.
- Butler Substation –
 - Reconfigure 138 kV bus to install a 10-ohm series reactor between bus 1 and bus 2;
 - Reposition 138 kV line terminals to connect Butler – Bluemound 138 kV Line (5051) to bus 2, and Butler – Bluemound 138 kV Line (5061) to bus 3; and
 - Split the Granville – Tosa 138 kV line (3443) into two segments, terminate the Granville segment at bus 1 and terminate the Tosa segment at bus 2.
- Tamarack Substation – reconfigure 138 kV bus.

Transmission Line Scope:

- Rebuild the Granville – Arcadian 345 kV (9911) and Granville – Tamarack and Tamarack – Sussex 138 kV (3444/36341) double circuit line to a 345 kV double circuit line between the Granville and Mill Road substations.
- Network the Granville – Arcadian 345 kV line (9911) into the Mill Road Substation.
- Network the Cypress – Arcadian 345 kV line (L-CYP31) into the Mill Road Substation.
- Uprate both of the newly formed Arcadian – Mill Road 345 kV lines.
- Network the Tamarack – Sussex 138 kV line (36341) into the Mill Road Substation.
- Construct new Mill Road – Tamarack and Tamarack – Butler 138 kV lines.

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- Network the Germantown – Bark River 138 kV line (2661) into the Mill Road Substation, and reconductor the newly formed Mill Road – Germantown 138 kV line.

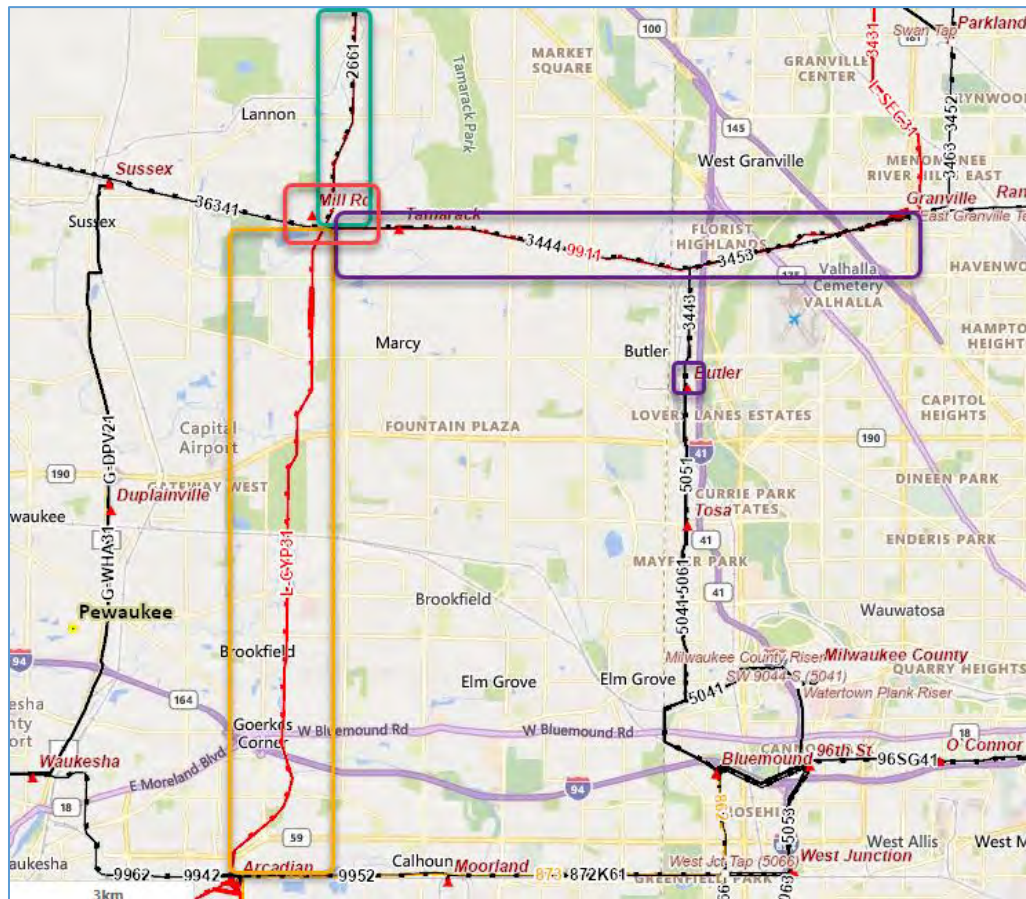


Figure 4.1.1
Geographical Scope Areas of Alternative 1

Figure 4.1.1 depicts the project scope with the following color-coded interpretations:

- Purple Outline – Rebuilt and new transmission line facilities
- Red Outline – New 345/138 kV substation facilities
- Green Outline – 138 kV reconductor
- Yellow Outline – 345 kV uprate

4.1.1 NERC TPL-001 Analysis – Single and Multiple Event Simulations

As a performance indicator, ATC is evaluating Alternative #1 to resolve the single event and the multiple event contingencies listed in the Appendix E tables and summarized in Section 3.5, particularly the Western Milwaukee area limitations.

4.1.1.1 2028 Summer Peak Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #1 successfully addresses all 49 thermal limitations shown in Table 3.2.1. There are no voltage limitations before and after Alternative #1 is implemented.
- For the multiple event analysis, Alternative #1 successfully addresses 645 of 647 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #1 is implemented.
 - There are two exceptions that Alternative #1 did not address and both can be mitigated by redispatching generation between the two outages of the P6 contingency event.

For the Full Study Area:

- For the single event analysis, Alternative #1 successfully addresses 43 of the 119 thermal limitations shown in Table 3.2.2 and did not address voltage limitations shown in Table 3.2.4, since they are remote from the Focused Study Area.
- For the multiple event analysis, Alternative #1 successfully addresses 797 of the 1340 thermal limitations shown in Table 3.2.6 and did not address voltage limitations shown in Table 3.2.8, since they are remote from the Focused Study Area.
- All of the remaining limitations are outside of the Western Milwaukee area.

4.1.1.2 2028 Shoulder Load Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #1 successfully addresses the only thermal limitation shown in Table 3.2.1. There are no voltage limitations before and after Alternative #1 is implemented.
- For the multiple event analysis, Alternative #1 successfully addresses 50 of 52 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #1 is implemented.
 - There are two exceptions that Alternative #1 did not address and both can be mitigated by redispatching generation between the two outages of the P6 contingency event.

For the Full Study Area:

- For the single event analysis, Alternative #1 successfully addresses eight of the 53 thermal limitations shown in Table 3.2.2 and did not address voltage limitations shown in Table 3.2.4, since they are remote from the Focused Study Area.
- For the multiple event analysis, Alternative #1 successfully addresses 37 of the 333 thermal limitations shown in Table 3.2.6. There are no voltage limitations before and after Alternative #1 is implemented.
- All of the remaining limitations are outside of the Western Milwaukee area.

4.1.1.3 2033 Summer Peak Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #1 successfully addresses 47 of 49 thermal limitations shown in Table 3.2.1. There are no voltage limitations before and after Alternative #1 is implemented.
 - The two exceptions that Alternative #1 did not address are single contingency events (P2 and P7) that result in the [REDACTED]. The remaining overload facility is the Granville – Butler 138 kV line (3443) and this facility was strategically left out of the scope of Alternative #1 because the limitation only shows up in the 10-year summer peak model, which allows ATC to incorporate it into ongoing study efforts for efficiency, such as MISO LRTP Tranche 2 or the asset renewal work in the Granville – Bluemound 138 kV corridor.
- For the multiple event analysis, Alternative #1 successfully addresses 673 of 677 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #1 is implemented.
 - There are four exceptions that Alternative #1 did not address and these can be mitigated by redispatching generation between the two outages of the P6 contingency event.

For the Full Study Area:

- For the single event analysis, Alternative #1 successfully addresses 54 of the 214 thermal limitations shown in Table 3.2.2 and did not address voltage limitations shown in Table 3.2.4 since they are remote from the Focused Study Area.
- For the multiple event analysis, Alternative #1 successfully addresses 602 of the 1652 thermal limitations shown in Table 3.2.6 and 6 of the 26 voltage limitations shown in Table 3.2.8.
- All of the remaining limitations are outside of the Western Milwaukee area.

4.1.1.4 2028 Light Load Modeling Scenario

For the Focused Study Area:

- For the single event analysis, there are no thermal or voltage limitations before and after Alternative #1 is implemented.
- For the multiple event analysis, Alternative #1 successfully addresses all 24 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #1 is implemented.

For the Full Study Area:

- For the single event analysis, Alternative #1 did not address thermal limitations shown in Table 3.2.2 since they are remote from the Focused Study Area. There are no voltage limitations before and after Alternative #1 is implemented.

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- For the multiple event analysis, Alternative #1 successfully addresses 20 of the 116 thermal limitations shown in Table 3.2.6. There are no voltage limitations before and after Alternative #1 is implemented.
- All of the remaining limitations are outside of the Western Milwaukee area.

The tables below summarize ATC's study results for Alternative #1. Refer to Appendix E for the detailed study results.

Table 4.1.1
Summary of Single and Multiple Event Contingency – Thermal Results
Focused Study Area

NERC Contingency		Study Case				
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
Intact System	P0	0	0	0	0	Appendix E, Table E5
Single Event	P1	0	0	0	0	Appendix E, Table E6
	P2	0	1	0	0	Appendix E, Table E6
	P5	0	0	0	0	Appendix E, Table E6
	P7	0	1	0	0	Appendix E, Table E6
Multiple Event	P3	0	0	0	0	Appendix E, Table E7
	P6	2	4	2	0	Appendix E, Table E7

Table 4.1.2
Summary of Single and Multiple Event Contingency – Voltage Results
Focused Study Area

NERC Contingency		Study Case				
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
Intact System	P0	0	0	0	0	Appendix E, Table E5
Single Event	P1	0	0	0	0	Appendix E, Table E6
	P2	0	0	0	0	Appendix E, Table E6
	P5	0	0	0	0	Appendix E, Table E6
	P7	0	0	0	0	Appendix E, Table E6
Multiple Event	P3	0	0	0	0	Appendix E, Table E7
	P6	0	0	0	0	Appendix E, Table E8

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Table 4.1.3
Summary of Single and Multiple Event Contingency – Thermal Results
Full Study Area

NERC Contingency		Study Case				Appendix Table Reference
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
Intact System	P0	0	2	0	1	Appendix E, Table E5
Single Event	P1	17	61	9	11	Appendix E, Table E6
	P2	51	82	34	3	Appendix E, Table E6
	P5	2	2	0	0	Appendix E, Table E6
	P7	6	15	2	5	Appendix E, Table E6
Multiple Event	P3	136	255	37	19	Appendix E, Table E7
	P6	407	795	259	77	Appendix E, Table E8

Table 4.1.4
Summary of Single and Multiple Event Contingency – Voltage Results
Full Study Area

NERC Contingency		Study Case				Appendix Table Reference
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
Intact System	P0	0	0	0	0	Appendix E, Table E5
Single Event	P1	0	0	0	0	Appendix E, Table E6
	P2	23	23	20	0	Appendix E, Table E6
	P5	0	0	0	0	Appendix E, Table E6
	P7	0	0	0	0	Appendix E, Table E6
Multiple Event	P3	0	0	0	0	Appendix E, Table E7
	P6	14	20	0	0	Appendix E, Table E8

4.1.2 Sensitivity Analysis – Elm Road Generation Offline

ATC conducted a sensitivity analysis for Alternative #1 using the 2028 Shoulder model with an Elm Road unit offline to simulate a generator in a planned maintenance outage, as described in Section 3.3.

For the Focused Study Area:

- For the single event analysis, Alternative #1 successfully addresses 31 of 33 thermal limitations noted in Table 3.3.1. The remaining overloaded facility is the Granville – Butler 138 kV line (3443) and this facility was strategically left out of the scope of Alternative #1 (as mentioned previously) to allow ATC to incorporate it into ongoing study efforts for efficiency,

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such as MISO LRTP Tranche 2 or the asset renewal work in the Granville – Bluemound 138 kV corridor. There were no voltage limitations to address.

- For the multiple event analysis, Alternative #1 successfully addresses 291 of 299 thermal limitations noted in Table 3.3.3, and all remaining overloads can be mitigated by redispatching generation between the two outages of the P6 contingency event. There are no voltage limitations before and after Alternative #1 is implemented in the Focused Study Area.

Table 4.1.5
Summary of Single Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	0	Appendix E, Table E6.5.1
P2	1	Appendix E, Table E6.5.1
P5.5	0	Appendix E, Table E6.5.1
P7	1	Appendix E, Table E6.5.1

Table 4.1.6
Summary of Single Event Contingency – Voltage Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	0	Appendix E, Table E6.5.2
P2	0	Appendix E, Table E6.5.2
P5.5	0	Appendix E, Table E6.5.2
P7	0	Appendix E, Table E6.5.2

Table 4.1.7
Summary of Multiple Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	0	Appendix E, Table E7.5.1
P6	8	Appendix E, Table E8.5.1

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Table 4.1.8
Summary of Multiple Event Contingency – Voltage Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	0	Appendix E, Table E7.5.2
P6	0	Appendix E, Table E8.5.2

4.1.3 Loss Analyses

ATC performed system loss studies on the 2028 Summer Peak and Shoulder modeling scenarios, with the results shown in Table 4.1.9 below. The results show reductions in losses on both the ATC system and entire Eastern Interconnection System.

Table 4.1.9
Alternative #1 Loss Analysis

Comparison Factor	Alternative #1
Δ ATC 2028 Summer Peak losses (MW)	-3.2
Δ System 2028 Summer Peak losses (MW)	-3.0
Δ ATC 2028 Shoulder losses (MW)	-2.6
Δ System 2028 Shoulder losses (MW)	-2.2

4.1.4 Project Cost

The cost estimate for Alternative #1 is \$424 million in 2027 dollars.

4.1.5 Summary of Alternative #1

In summary, Alternative #1 effectively addressed almost all of the thermal and voltage limitations within the Focused Study Area, which is the Western Milwaukee area. A few exceptions, as noted in Section 4.1.1 above, that are included in ongoing studies for efficiency or where other mitigation options are available. There are remaining thermal and voltage limitations in the Full Study Area, but they are further away from the Western Milwaukee area and will be evaluated in the ongoing study efforts mentioned in Section 3.1.2.

In the sensitivity analysis with an Elm Road unit offline, Alternative #1 also addressed almost all of the thermal and voltage limitations for the single and multiple events in the Focused Study Area. The results are similar as in the base cases analysis and no new limitations were identified.

In sum, the benefits of Alternative #1 are as follows:

- Alternative #1 addresses the three major project needs, including improving system reliability, supporting generation interconnection, and supporting load interconnections.

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- This alternative also improves system efficiency by reducing system losses and increasing transfer capability.
- The Mill Road Substation is conveniently located at the intersection of multiple 345 kV and 138 kV facilities. Networking these facilities into the Mill Road Substation effectively improves the network connectivity in the Western Milwaukee area.
- The new Mill Road – Granville 345 kV line effectively addressed key 345 kV contingencies by establishing a new high voltage path in the Western Milwaukee area.
- Alternative #1 uses a flow control device at the Butler Substation to redirect power flow away from the already congested 138 kV circuits and defer the asset renewal needs in the Granville – Bluemound 138 kV corridor.
- Alternative #1 coordinates with other regional ongoing studies to gain efficiency and avoid premature asset renewal scope of work.
- Utilization of the Butler flow control device improves the constructability and outage coordination for the Project.
- The scope of Alternative #1 can be accomplished in a reasonable timeline to meet the Project's targeted in-service date.

4.2 Alternative #2: New Mill Road 345/138 kV substation with new 345 kV line and 138 kV system rebuild

The scope of this alternative includes the following transmission facilities and is further defined in the Project Diagram shown in Appendix A Figure A2.

Substation Scope

- Mill Road Substation – Construct a new substation with a 345 kV ring bus, a 138 kV ring bus, a 500 MVA 345/138 kV transformer, and a 10-ohm series reactor on the Sussex – Mill Road 138 kV line.
- Granville Substation – Replace an existing transformer with a new 500 MVA 345/138 kV transformer and add one 345 kV line terminal.
- Tamarack Substation – Reconfigure 138 kV bus.

Transmission Line Scope:

- Rebuild the Granville – Arcadian 345 kV (9911) and Granville – Tamarack and Tamarack – Sussex 138 kV (3444/36341) double circuit line to a 345 kV double circuit line between the Granville and Mill Road substations.
- Network the Granville – Arcadian 345 kV line (9911) into the Mill Road Substation.
- Network the Cypress – Arcadian 345 kV line (L-CYP31) into the Mill Road Substation.
- Uprate both of the newly formed Arcadian – Mill Road 345 kV lines.
- Network the Tamarack – Sussex 138 kV line (36341) into the Mill Road Substation.
- Construct new Mill Road – Tamarack and Tamarack – Butler 138 kV lines.
- Network the Germantown – Bark River 138 kV line (2661) into the Mill Road Substation, and reconductor the newly formed Mill Road – Germantown 138 kV line.

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- In the existing Granville – Bluemound corridor
 - Construct a new Granville – Butler 138 kV line.
 - Rebuild the Granville – Butler 138 kV line (3453).
 - Rebuild the Granville – Tosa 138 kV line (3443).
 - Rebuild the Butler – Bluemound 138 kV Line (5051).
 - Rebuild the Butler – Bluemound 138 kV Line (5061).
 - Rebuild the Tosa – Milwaukee County tap – Bluemound 138 kV line (5041) but excluding the Milwaukee County tap – Milwaukee County portion of the line.

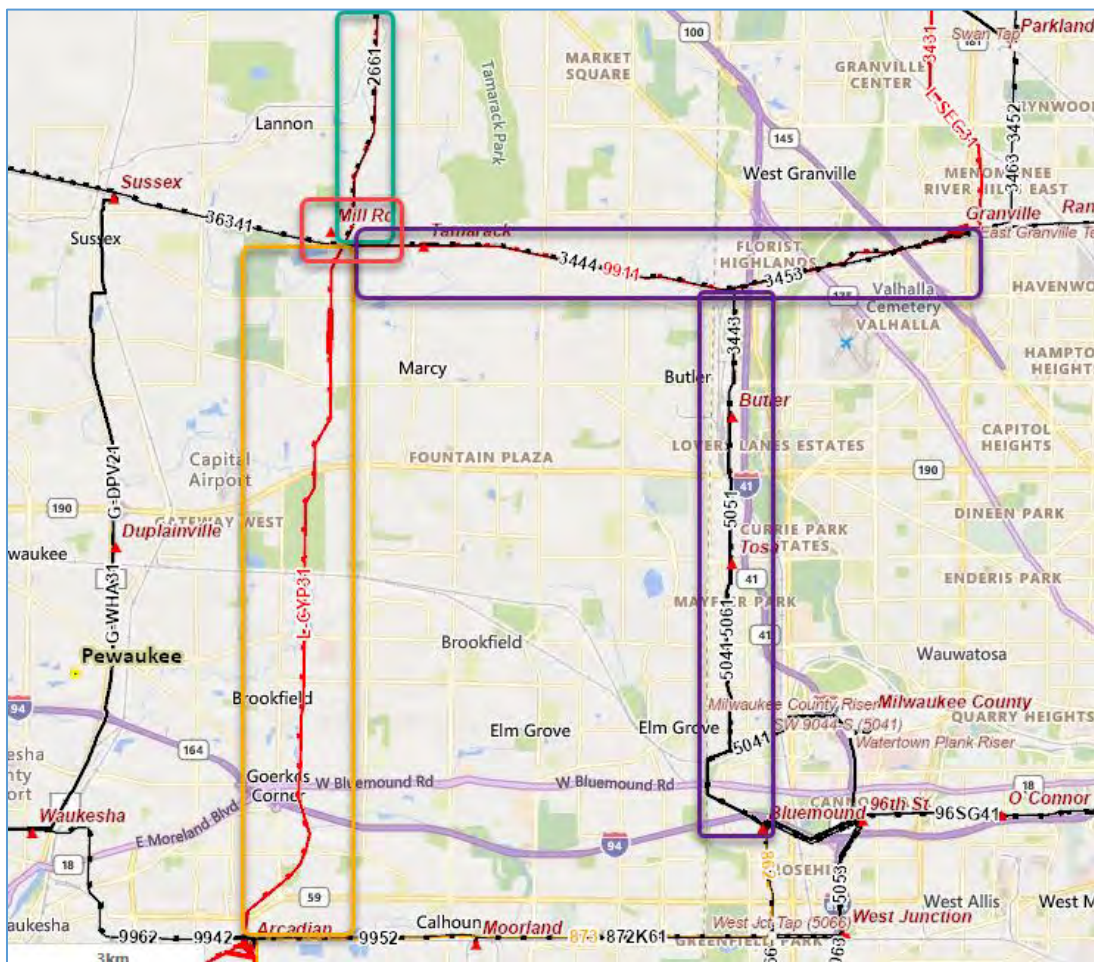


Figure 4.2.1
Geographical Scope of Alternative 2 project work

Figure 4.2.1 depicts the project scope work with the following color-coded interpretations:

- Purple Outline – Rebuilt and new transmission line facilities

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- Red Outline – New 345/138 kV substation facilities
- Green Outline – 138 kV reconductor
- Yellow Outline – 345 kV uprate

The following sub-sections will highlight the performance of this alternative. Power flow results are summarized in Appendix E.

4.2.1 NERC TPL-001 Analysis – Single and Multiple Event Simulations

As a performance indicator, ATC is evaluating Alternative #2 to resolve the single event and the multiple event contingencies listed in the Appendix E tables and summarized in Section 3.5, particularly the Western Milwaukee area limitations.

4.2.1.1 2028 Summer Peak Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #2 successfully addresses all 49 thermal limitations shown in Table 3.2.1. There are no voltage limitations before and after Alternative #2 is implemented.
- For the multiple event analysis, Alternative #2 successfully addresses all 647 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #2 is implemented.

For the Full Study Area:

- For the single event analysis, Alternative #2 successfully addresses 61 of the 119 thermal limitations shown in Table 3.2.2 and did not address voltage limitations shown in Table 3.2.4, since they are remote from the Focused Study Area.
- For the multiple event analysis, Alternative #2 successfully addresses 216 of the 1340 thermal limitations shown in Table 3.2.6 and did not address the 14 voltage limitations shown in Table 3.2.8.
- All of the remaining limitations are outside of the Western Milwaukee area.

4.2.1.2 2028 Shoulder Load Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #2 successfully addresses the one thermal limitation shown in Table 3.2.1. There are no voltage limitations before and after Alternative #2 is implemented.
- For the multiple event analysis, Alternative #2 successfully addresses all 52 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #2 is implemented.

For the Full Study Area:

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- For the single event analysis, Alternative #2 successfully addresses 15 of the 53 thermal limitations shown in Table 3.2.2 and did not address the 20 voltage limitations shown in Table 3.2.4.
- For the multiple event analysis, Alternative #2 did not address the 333 thermal limitations shown in Table 3.2.6. There are six unaddressed voltage limitations after Alternative #2 is implemented.
- All remaining limitations are outside of the Western Milwaukee area.

4.2.1.3 2033 Summer Peak Modeling Scenario

For the Focused Study Area:

- For the single event analysis, Alternative #2 successfully addresses all 49 thermal limitations shown in Table 3.2.1. There are no voltage limitations before and after Alternative #2 is implemented.
- For the multiple event analysis, Alternative #2 successfully addresses all 677 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #2 is implemented.

For the Full Study Area:

- For the single event analysis, Alternative #2 successfully addresses 62 of the 214 thermal limitations shown in Table 3.2.2 and did not address the 20 voltage limitations shown in Table 3.2.4.
- For the multiple event analysis, Alternative #2 did not address the 1652 thermal limitations shown in Table 3.2.6 and addresses 8 of the 26 voltage limitations shown in Table 3.2.8.
- All remaining limitations are outside of the Western Milwaukee area.

4.2.1.4 2028 Light Load Modeling Scenario

For the Focused Study Area:

- For the single event analysis, there are no thermal or voltage limitations before and after Alternative #2 is implemented.
- For the multiple event analysis, Alternative #2 successfully addresses all 24 thermal limitations shown in Table 3.2.5. There are no voltage limitations before and after Alternative #2 is implemented.

For the Full Study Area:

- For the single event analysis, Alternative #2 did not address the 19 thermal limitations shown in Table 3.2.2. There are no voltage limitations before and after Alternative #2 is implemented.
- For the multiple event analysis, Alternative #2 did not address the 116 thermal limitations shown in Table 3.2.6. There are no voltage limitations before and after Alternative #2 is implemented.
- All the remaining limitations are outside of the Western Milwaukee area.

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Table 4.2.1
Summary of Single and Multiple Event Contingency – Thermal Results
Focused Study Area

NERC Contingency		Study Case				Appendix Table Reference
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
Intact System	P0	0	0	0	0	Appendix E, Table E9
Single Event	P1	0	0	0	0	Appendix E, Table E10
	P2	0	0	0	0	Appendix E, Table E10
	P5	0	0	0	0	Appendix E, Table E10
	P7	0	0	0	0	Appendix E, Table E10
Multiple Event	P3	0	0	0	0	Appendix E, Table E11
	P6	0	0	0	0	Appendix E, Table E12

Table 4.2.2
Summary of Single and Multiple Event Contingency – Voltage Results
Focused Study Area

NERC Contingency		Study Case				Appendix Table Reference
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
Intact System	P0	0	0	0	0	Appendix E, Table E9
Single Event	P1	0	0	0	0	Appendix E, Table E10
	P2	0	0	0	0	Appendix E, Table E10
	P5	0	0	0	0	Appendix E, Table E10
	P7	0	0	0	0	Appendix E, Table E10
Multiple Event	P3	0	0	0	0	Appendix E, Table E11
	P6	0	0	0	0	Appendix E, Table E12

Table 4.2.3
Summary of Single and Multiple Event Contingency – Thermal Results
Full Study Area

NERC Contingency		Study Case				Appendix Table Reference
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	
Intact System	P0	0	1	0	1	Appendix E, Table E9
Single Event	P1	13	66	9	12	Appendix E, Table E10
	P2	41	70	27	3	Appendix E, Table E10

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Multiple Event	P5	1	2	0	0	Appendix E, Table E10
	P7	3	13	2	5	Appendix E, Table E10
	P3	130	291	30	9	Appendix E, Table E11
	P6	994	1565	389	129	Appendix E, Table E12

Table 4.2.4
Summary of Single and Multiple Event Contingency – Voltage Results
Full Study Area

NERC Contingency		Study Case				
		2028 Summer Peak	2033 Summer Peak	2028 Shoulder Load	2028 Light Load	Appendix Table Reference
Intact System	P0	0	0	0	0	Appendix E, Table E9
Single Event	P1	0	0	0	0	Appendix E, Table E10
	P2	20	20	20	0	Appendix E, Table E10
	P5	0	0	0	0	Appendix E, Table E10
	P7	0	0	0	0	Appendix E, Table E10
Multiple Event	P3	0	0	0	0	Appendix E, Table E11
	P6	18	18	6	0	Appendix E, Table E12

4.2.2 Sensitivity Analysis – Elm Road Generation Offline

ATC conducted a sensitivity analysis for Alternative #2 using the 2028 Shoulder model with an Elm Road unit offline to simulate a generator in a planned maintenance outage, as described in Section 3.3.

For the Focused Study Area:

- For the single event analysis, Alternative #2 successfully addresses all 33 thermal limitations noted in Section 3.3.2. There were no voltage limitations to address.
- For the multiple event analysis, Alternative #2 successfully addresses all 299 thermal limitations noted in Section 3.3.3. There were no voltage limitations to address.

Table 4.2.5
Summary of Single Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	0	Appendix E, Table E10.5.1
P2	0	Appendix E, Table E10.5.1
P5.5	0	Appendix E, Table E10.5.1
P7	0	Appendix E, Table E10.5.1

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Table 4.2.6
Summary of Single Event Contingency – Voltage Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P1	0	Appendix E, Table E10.5.2
P2	0	Appendix E, Table E10.5.2
P5.5	0	Appendix E, Table E10.5.2
P7	0	Appendix E, Table E10.5.2

Table 4.2.7
Summary of Multiple Event Contingency – Thermal Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	0	Appendix E, Table E11.5.1
P6	0	Appendix E, Table E12.5.1

Table 4.2.8
Summary of Multiple Event Contingency – Voltage Results
Focused Study Area

NERC Contingency	Study Case	
	2028 Shoulder Load – ERG2 Offline	Appendix Table Reference
P3	0	Appendix E, Table E11.5.2
P6	0	Appendix E, Table E12.5.2

4.2.3 Loss Analyses

ATC performed system loss studies on the 2028 Summer Peak and Shoulder Modeling Scenarios, with the results shown in Table 4.2.9 below. The results show reductions in losses on both the ATC system and entire Eastern Interconnection System.

Table 4.2.9
Alternative #2 Loss Analysis

Comparison Factor	Alternative #1
Δ ATC 2028 Summer Peak losses (MW)	-4.0
Δ System 2028 Summer Peak losses (MW)	-6.4
Δ ATC 2028 Shoulder losses (MW)	-1.7
Δ System 2028 Shoulder losses (MW)	-4.2

4.2.4 Project Cost

The Planning level estimate for Alternative #2 is \$569 million in 2027 dollars.

4.2.5 Summary of Alternative #2

In summary, Alternative #2 effectively addressed all thermal and voltage limitations within the Focused Study Area, which is the Western Milwaukee area. There are remaining thermal and voltage limitations in the Full Study Area, but they are further away from the Western Milwaukee area and will be evaluated in the ongoing study efforts mentioned in Section 3.1.2.

In the sensitivity analysis with an Elm Road unit offline, Alternative #2 also addressed all thermal and voltage limitations for the single and multiple events in the Focused Study Area. The results are similar as in the base cases analysis and no new limitations were identified.

The benefits of Alternative #2 are as follows:

- Alternative #2 addresses the three major Project needs, including improving system reliability, supporting generation interconnection, and supporting load interconnections.
- Alternative #2 improves system efficiency by reducing system losses and increasing transfer capability.
- The Mill Road Substation is conveniently located at the intersection of multiple 345 kV and 138 kV facilities. Networking these facilities into Mill Road effectively improves the network connectivity in the Western Milwaukee area,
- The new Mill Road – Granville 345 kV line effectively addressed key 345 kV contingencies by establishing a new high voltage path in the Western Milwaukee area,
- Alternative #2 addresses the 138 kV limitations in the Granville – Bluemound corridor.

4.3 List of Other Transmission Options Not Pursued

As described below, there were several options that ATC considered, but did not pursue or study in detail. ATC also considered but rejected non-transmission options, as described in Section 7.4.

4.3.1 No Build Option

ATC evaluated maintaining the existing system as-is (i.e., a no-build option or “Do Nothing Approach”). However, this is not a viable option. As described in Section 3, ATC’s steady state reliability analysis of the existing transmission system indicates that many contingency events can

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occur during all times of the year result in various thermal or voltage limitations, requiring a solution per NERC reliability standards. These identified limitations also impact the capability to interconnect new generation and new loads proposed in the southeast Wisconsin area. A no build alternative would also not address other needs the Project is intended to address, such as, but not limited to: transfer capability, congestion, asset renewal, and operational flexibility and guides.

4.3.2 Rebuild Granville – Bluemound 138 kV Transmission Corridor

ATC considered rebuilding the 138 kV transmission lines between the Granville and Bluemound substations. This option would only increase existing facility ratings and address the local 138 kV asset renewal needs. However, many of the key contingencies in the Focused Study Area involve both 345 kV and 138 kV voltage classes; therefore, without improvements to the 345 kV voltage class, this option is inadequate to address the system needs. This option is also subject to the same right-of-way and environmental constraints as Alternative #2, which are described in greater detail below. Therefore, ATC determined that this is not a viable solution and dismissed it from further detailed consideration.

4.3.3 Construct New 345 kV Transmission Line From Granville Substation

This option considered constructing a new 345 kV transmission line from the Granville Substation to either the Arcadian or Bluemound substations. It is important to note that 345 kV facilities do not exist at the Bluemound Substation, so this option would require converting the 230 kV facilities at the Bluemound Substation to 345 kV. Regardless of the endpoint, this option does not address the key 138 kV contingencies in the Focused Study Area. Another major challenge associated with this option is routing and siting a new 345 kV line in a highly urbanized environment. Without addressing the 138 kV system needs, this option is not a viable solution and ATC therefore dismissed it from further detailed consideration.

4.3.4 Transmission Options Not Pursued Conclusion

Considering the options described above, ATC determined that a viable alternative for addressing the Project's stated needs should include improvements on both 138 kV and 345 kV facilities. The last two options described above, which addressed only one these voltage classes, are not sufficient to address the limitations in the Focused Study Area. Therefore, Alternatives #1 and #2 incorporated both voltage classes to optimize the proposed Project scope.

5. System Alternative Comparison

The purpose of this section is to present and compare the performance of the alternatives outlined in Section 4 using various criteria. The alternatives are compared based on reliability, losses, in-service date, cost, and environmental and social impacts.

5.1 Alternative Comparison

This section compares power flow results, system losses, and estimated cost for each alternative described in Section 4.

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To compare power flow performance, the Focused Study Area definition was used to identify the adequacy of the solution. Table 5.1.1 summarizes remaining contingencies with limitations after each alternative is implemented. Alternative #1 and #2 performed similarly and address almost all thermal limitations in the Western Milwaukee area. Although a few exceptions remain for Alternative #1, these limitations are either strategically left out of the Project scope for efficiency (i.e., so they can be addressed as part of other ongoing studies) or can be addressed with mitigation options in between contingencies. These exceptions do not weaken the effectiveness of Alternative #1. Both alternatives address all voltage limitations for the Western Milwaukee area. Therefore, Alternative #1 and #2 are demonstrating equivalent performance from a power flow perspective.

Table 5.1.1
Alternative Comparison Summary
Remaining Contingencies with Limitations – Focused Study Area

Modeling Scenario	Alternative #1		Alternative #2	
	Thermal	Voltage	Thermal	Voltage
2028 Summer Peak	2	0	0	0
2033 Summer Peak	6	0	0	0
2028 Shoulder	2	0	0	0
2028 Light Load	0	0	0	0
2028 Shoulder Sensitivity	2	0	0	0
Totals	12	0	0	0

Table 5.1.2 summarizes the remaining contingencies with limitations in the Full Study Area. Alternative #1 performed better than Alternative #2 in addressing the thermal limitations outside the Western Milwaukee Area. Regardless, additional network upgrades will be needed to resolve the remaining limitations in Southeast Wisconsin.

Table 5.1.2
Alternative Comparison Summary
Remaining Contingencies with Limitations – Full Study Area

Modeling Scenario	Alternative #1		Alternative #2	
	Thermal	Voltage	Thermal	Voltage
2028 Summer Peak	619	37	1182	38
2033 Summer Peak	1212	43	2008	38
2028 Shoulder	341	20	457	26
2028 Light Load	116	0	159	0
Totals	2288	100	3806	102

ATC performed a loss analysis for the two alternatives on both the ATC system and the total system of the Eastern Interconnect. Table 5.1.3 below illustrates that both alternatives reduce ATC and total

system losses by various magnitudes. Both alternatives provide positive benefits from a system losses perspective.

Table 5.1.3
Alternative Comparison Summary: System Losses

Comparison Factor	Alternative #1	Alternative #2
Δ ATC 2028 Summer Peak losses (MW)	-3.2	-4.0
Δ System 2028 Summer Peak losses (MW)	-3.0	-6.4
Δ ATC 2028 Shoulder losses (MW)	-2.6	-1.7
Δ System 2028 Shoulder losses (MW)	-2.2	-4.2

Another point of comparison is cost. Alternative 1, the Project, is the less expensive alternative. The main driver of the cost difference between the two alternatives is the scope of 138 kV work in the Granville – Bluemound transmission corridor. Alternative #1 utilizes a flow control device at the Butler Substation, while Alternative #2 rebuilds all 138 kV lines in this corridor. The much higher cost for Alternative #2 reflects the challenges associated with rebuilding all the 138 kV lines in the highly urbanized corridor.

Table 5.1.4
Alternative Comparison Summary: Project Cost

Comparison Factor	Alternative #1	Alternative #2
Project Planning Level Cost Estimate (2027 dollars)	\$424M	\$569M

With respect to schedule, Alternative #2 requires rebuilding all 138 kV lines in the Granville – Bluemound transmission corridor, which is a highly urbanized area. From this perspective, Alternative #2 presents a much higher schedule risk to meet the targeted in-service date.

Finally, Alternative #2 would likely have higher impacts to the environment and surrounding community. As noted, this alternative requires rebuilding all 138 kV lines in the Granville – Bluemound transmission corridor, which is a highly urbanized area. The ROW requirements for this aspect of the project scope of Alternative #2 would likely result in greater impacts to the environment and surrounding community.

5.2 Summary of Alternative Comparison

ATC evaluated two system alternatives in detail to address existing limitations in the Western Milwaukee area. Both alternatives involve constructing new transmission lines between the Granville and the new Mill Road substations. The main difference between Alternative #1 and #2 is that Alternative #1 utilizes a flow control device at the Butler Substation, while Alternative #2 rebuilds the 138 kV facilities in the Granville – Bluemound corridor.

Power Flow analysis shows that the two alternatives perform similarly to meet the NERC TPL reliability requirements and adequately address the system needs. Both alternatives improve the

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network connectivity by adding the Mill Road Substation and the new 345 kV transmission line. This effectively eliminates the key 345 kV limitations in the Focused Study Area. For the 138 kV limitations, Alternative #1 utilizes a flow control device while Alternative #2 rebuilds the entire 138 kV facilities in the Granville – Bluemound corridor. Although both alternatives are effective at meeting the Project’s stated needs, there is a significant difference between the alternatives in terms of cost, constructability, schedule, and impacts.

Alternative #1 is the lower cost alternative by \$145 million. Again, the main reason for the cost difference is because Alternative #1 utilizes a flow control device at the Butler Substation to effectively redirect the power flow away from the historically congested Granville – Bluemound corridor and provides considerable relief from the “hourglass” configuration of the existing system, without committing significant investments in new assets. This allows ATC to maximize the useful life of the 138 kV assets and defers the need to rebuild multiple lines in a highly urbanized area, as compared to the scope in Alternative #2.

Moreover, Alternative #1 has less new right-of-way, less public and environmental impact, and has greater ability to achieve the targeted in-service date. Additional benefits for the project include providing operational flexibility, increasing transfer capability, reducing market congestion and system losses, better coordination with future transmission expansion plans, and providing further system support to enable new load and generation interconnections.

Considering all these factors, ATC selects Alternative #1 as the preferred alternative.

6. PSC Authorization Requirements

The Project requires more than a mile of new right-of-way for a transmission line greater than 100 kV. As such, ATC will need to file an application for a CPCN with the Commission to implement this Project.

7. Other Considerations

7.1 Delayability

The schedule for this project is driven by the new load addition in the EITM zone reaches its higher load demand in the 2027 timeframe. Due to the size of the load additions, there are no viable temporary solutions to serve the load.

7.2 Coordination with Future Plans

As discussed in Section 3, there are multiple large load interconnection requests in southeast Wisconsin and ATC recently submitted a CPCN application for the Racine County Western Feed Transmission Lines Project (Docket #137-CE-209) as the first of a series network upgrades needed to reliably serve the new load additions. In that application, it is noted that the Racine County Western Feed Transmission Line Project will not address all system limitations caused by these load additions.

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The Mill Road – Granville 345 kV Project will be the second network upgrade needed to address the system limitations specifically identified in the Western Milwaukee area.

However, as the results show in Section 4 and 5, there are remaining thermal and voltage limitations in the Full Study Area outside of the Western Milwaukee area. These limitations will be incorporated into other ongoing study efforts. The ongoing studies listed in Section 3.1.2 will address existing and new system needs.

- Oak Creek/Elm Road Outlet Study – This study is evaluating a new 345 kV line between the Elm Road and Racine substations.
- Elkhorn – North Lake Geneva Area Study – This study has been completed and the projects have been submitted to MISO MTEP25 as target Appendix A projects.
- Cypress 345 kV Uprate Study – This study is evaluating facility uprates north of the Focused Study Area.

Other studies are ongoing in the Full Study Area, which are listed below for awareness. These studies have various need drivers, but they are not considered required network upgrades to support the load addition in southeast Wisconsin.

- The Southeastern Wisconsin – Northern Illinois study is being evaluated in MISO’s DPP 2021 cycle generation interconnection study process and the current schedule is for the studies to be complete in late 2024.
- For the Oak Creek Power Plant study, MISO conducted a study and approved the retirement of the Oak Creek coal-fired generating station in 2022. Earlier this year, We Energies requested approval from the Commission for its Oak Creek Single Combustion Turbine Project (Docket No. 6630-CE-317), which will replace the existing coal-fired generation units at the Oak Creek Generation Station with gas combustion turbines. MISO kicked off the Oak Creek generation replacement study in early September 2024 and a tentative schedule is for the replacement impact study to be completed by the end of 2024.
- For the Milwaukee 230 kV Conversion/Reconfiguration Study, MISO is currently evaluating this project for inclusion in its LRTP Tranche 2 portfolio. MISO’s LRTP tranche 2 is currently scheduled to be finalized and approved in December 2024.
- MISO’s LRTP Tranche 2 study is a key initiative of MISO’s Reliability Imperative to improve the ability to move electricity across the MISO region. Tranche 2 of the LRTP effort proposes several new 345 kV and 765 kV facilities in the Full Study Area.

There will be a continued effort to coordinate within the MISO processes for all developing study efforts in southeast Wisconsin to ensure load, generation, and regional network needs are adequately and reliably met.

7.3 Coordination with Other Entities

ATC’s coordination with external stakeholders includes the MISO MTEP process. ATC initially submitted the Project to MISO as an MTEP Appendix B project on October 26, 2023 (MTEP

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ID#24919), as ATC first identified the need for the Project in MISO's MTEP23 annual reliability assessment.

On July 5, 2024, ATC submitted a group of projects to MISO to support the load addition within the EITM zone. During the Expedited Project Review (EPR) process, ATC worked with MISO to identify the Mill Road – Granville project as a required network upgrade to support the load addition. As a result, the Project is expected to be included in Appendix A for MTEP25. MISO also engaged neighboring transmission owner and regional transmission organizations (Commonwealth Edison and PJM) to participate in this review, since the load addition is near their transmission systems.

7.4 Non-Transmission Options

ATC is a transmission-only utility that is precluded from implementing energy conservation or efficiency programs or owning electric generation resources. Therefore, ATC cannot develop non-transmission options, such as, noncombustible or combustible renewable energy resources to serve address the project needs.

For the load addition in the EITM zone, due to the size of the load, We Energies existing distribution infrastructure cannot serve the load. Also, because this load is a 24/7/365 continuous operation, a battery energy storage system (BESS) is not a viable option. In summary, non-transmission options are not cost effective or technically feasible to address the need for this project.

7.5 Nuclear Plant Interface Coordination Requirements (NUC-001)

The Point Beach nuclear power plant is outside the study area and remote from this Project. Accordingly, the Project will not impact the nuclear power plant.

7.6 Fault Duty Analysis

System protection has performed a fault duty analysis of the ATC system with all approved and potential expected future projects included to establish an expected/worst case scenario to provide input to engineering on Project design requirements. ATC conducted this analysis to ensure reasonable fault currents in the area with the preferred Project in-service. The analysis determined that there was a need to increase the interrupting capability of the breakers included in the Project scope of work in the Granville and Butler areas.

7.7 Stability Analyses

ATC did not perform any voltage stability analyses, as there were no steady state voltage results in the Focused Study Area that indicated the potential for voltage collapse. As part of the CPCN application that ATC submitted for the Racine County Western Feed Transmission Line Project, ATC conducted a voltage stability analysis, which covered this Focused Study Area addressed in this PSD. This previous analysis indicated that there were no voltage instability issues identified in the evaluated case(s) when the Western Feed Transmission Lines Project was assumed to be in-service. Therefore, there was no need to perform a voltage stability analysis as part of this PSD.

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The preferred Project is expected to provide some relief on the existing P6 stability restrictions on Germantown units. The Germantown Operating Guide (see Section 3.1.7) will be re-evaluated to reflect the new system configuration.

7.8 Economic Analysis of Preferred Project

The primary purpose of this project is to meet NERC reliability standards. It is not driven by economic benefits. However, there is historical system congestion in the Western Milwaukee area that may be impacted by the increased power flows driven by new load and generation. Any proposed project should not significantly increase market congestion. Therefore, an economic-based PROMOD study was completed to identify post-Project congestion impacts for the preferred Project.

For background, the electrical grid must simultaneously produce and deliver energy to meet customer demand. To accomplish this, generation is dispatched from least expensive to most expensive until all load is served. However, any transmission element could go out of service due to planned or forced outages. These outages shift power flows onto surrounding elements, which can cause thermal overloads based on equipment ratings. This overload is called congestion. If real-time contingency analysis (RTCA) determines that the outage could cause system performance issues, then more expensive generation is re-dispatched to reduce power flows to within acceptable limits. Additionally, system congestion has two metrics: number of hours and shadow price. The number of hours metric conveys how often the redispatch occurs, and the shadow price is the cost increase to customers due to implementing the redispatch methodology. Therefore, as either metric increases, the congestion becomes more significant.

This study evaluates the Project's economic performance based on the MISO MTEP23 PROMOD Future 2A (F2A) planning models. The assumptions made in PROMOD F2A futures are found on MISO's website and include LRTP Tranche 1 projects. This economic study included several known projects proposed since the release of the models:

- Mullet River Area Reliability Project (MTEP ID# 21900)
- West Junction sectionalizing project (MTEP ID# 50041)
- Cornell reconfigurations (MTEP Program ID# 20201)
- MISO DPP 2018 cycle generation and associated network upgrade projects
- MISO DPP 2019 cycle generation and associated network upgrade projects
- Oak Creek generation retirement
- All We Energies submitted LIRFs for the EITM zone
- Racine County Western Feed Transmission Lines Project

As described in Section 3.2, there are several pre-existing study efforts underway to address various system needs, such as reliability issues, asset renewal projects, or potential generation interconnection projects. This economic study also took into account these pre-existing study efforts and included their preliminary solutions to evaluate the potential impact on system congestion.

The pre-existing studies are listed below:

- Granville – Bluemound study area (MISO DPP/reliability/asset renewal)

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- Elm Rd – Racine study (MISO DPP, LRTP tranche 2)
- Southeastern Wisconsin – Northern Illinois study (MISO DPP)
- Elkhorn – North Lake Geneva area study (MISO DPP and reliability)
- Oak Creek Generation Replacement study (MISO generation replacement)
- Milwaukee 230 kV Conversion/Reconfiguration study (reliability/asset renewal, LRTP tranche 2)
- Other MISO DPP 2020 Cycle generation and associated network upgrade projects

7.8.1 Economic Congestion Results

This section displays system performance results in the economic models discussed above when the Project is placed in-service. Table F.1 shown in Appendix F illustrates the annual total hours of occurrence for each constraint. A single constrained element may have multiple contingencies that cause a need for redispatch around that constraint. Additionally, contingencies labeled as "BASECASE" result in limitations on the constrained element's normal rating under system intact conditions.

Based on Table F.1, the follow observations can be provided:

- The [REDACTED] line is typically the significant P1 contingency for the market in the Focused Study Area. The preferred Project implements two 345 kV paths from the Granville to Mill Road to Arcadian substations, which will help relieve most of the local 138 kV congestion. There may still be congestion, but it would likely occur under maintenance conditions.
- Due to the flow control device on the 138 kV system and the increased north-to-south power flows through the Focused Study Area allowed by the Project, the new congestion limiter for the Focused Study Area is the new 345 kV facilities between the Mill Road and Granville substations. The ongoing MISO LRTP Tranche 2 studies and proposed facilities are expected to address this new congestion; therefore, no economic driven project is being proposed at this time to resolve this congestion.
- The MISO DPP 2021 cycle is currently in Phase 3 of the generation interconnection study process and a few proposed projects near southeast Wisconsin may help relieve some constraints.
- Aside from the MISO DPP and LRTP Tranche 2, there are multiple ongoing studies that may provide relief to constraints. These studies are listed in Section 3.1.2 and economic analysis is anticipated to be included as part of the total analysis for those projects.

In conclusion, this economic study did not identify the need to propose any economic-only projects in the Focused Study Area. ATC will continue to monitor the ongoing and future studies, such as MISO LRTP Tranche 2 and DPP 2021 cycle studies, and may recommend projects that would increase the ratings of transmission facilities in the area to generate additional economic benefits.

7.8.2 Economic Model Losses

See Appendix F Table F.2 for losses from the economic PROMOD models. The peak losses in MWh represent the maximum hourly losses and not necessarily the losses occurring during peak load hours. The loss value in GWh is the sum of each hourly loss MWh value for the simulated year.

8. Conclusions

Based on the analysis and investigations performed for this report, ATC concludes that:

- The Western Milwaukee area possesses some unique characteristics contributing to the need for additional transmission facilities. In its current configuration, the transmission system in this area creates an “hourglass” formation with three 345 kV lines on the north and south sides. In the middle are two 345 kV circuits and the associated parallel path 138 kV facilities, which have a relatively low capability to support high power flows during contingencies.
- The Western Milwaukee area has been a historical focus area for ATC, which the company has monitored for reliability issues and economic congestion. Recent generation and load interconnection requests have brought these issues to the forefront and require a holistic solution.
- ATC evaluated two system alternatives to address the foregoing limitations. Both alternatives involve constructing new transmission lines between the Granville Substation and the new Mill Road Substation. The main difference between Alternative #1 and #2 is that the former utilizes a flow control device at the Butler Substation, whereas the latter rebuilds the 138 kV facilities in the Granville – Bluemound transmission corridor.
- ATC’s steady state reliability power flow analysis shows that the two alternatives perform similarly to meet the NERC TPL reliability requirements and adequately address the system needs in the Focused Study Area. Although both are effective, there is a significant difference in overall cost, constructability, schedule risk, and environmental and community impacts.
- The cost estimate for Alternative #1 is \$424 million and the cost estimate for Alternative #2 is \$659 million.
- Alternative #1 has the advantage of utilizing a flow control device at the Butler Substation to redirect the power flow, which defers the needs to rebuild the 138 kV facilities in the Granville – Bluemound corridor, a highly urbanized area.
- Alternative #1 provides considerable relief from the existing “hourglass” configuration of the system, without committing significant new assets in the Granville – Bluemound corridor. This allows ATC to maximize the useful life of the existing 138 kV assets, which coordinates better with future plans.
- In summary, Alternative #1 is lower cost, requires less new right-of-way, has less public and environmental impact, and has a greater ability to achieve the targeted in-service date. Additional benefits for the project include providing operational flexibility, increasing transfer capability, reducing local congestion and system losses, and further enabling new load and generation interconnections.

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Considering all these factors, ATC selects Alternative #1 as the as the preferred transmission alternative. This report recommends that ATC Management approve the estimated \$424 million of ATC expenditures for the proposed Project as defined in this document.

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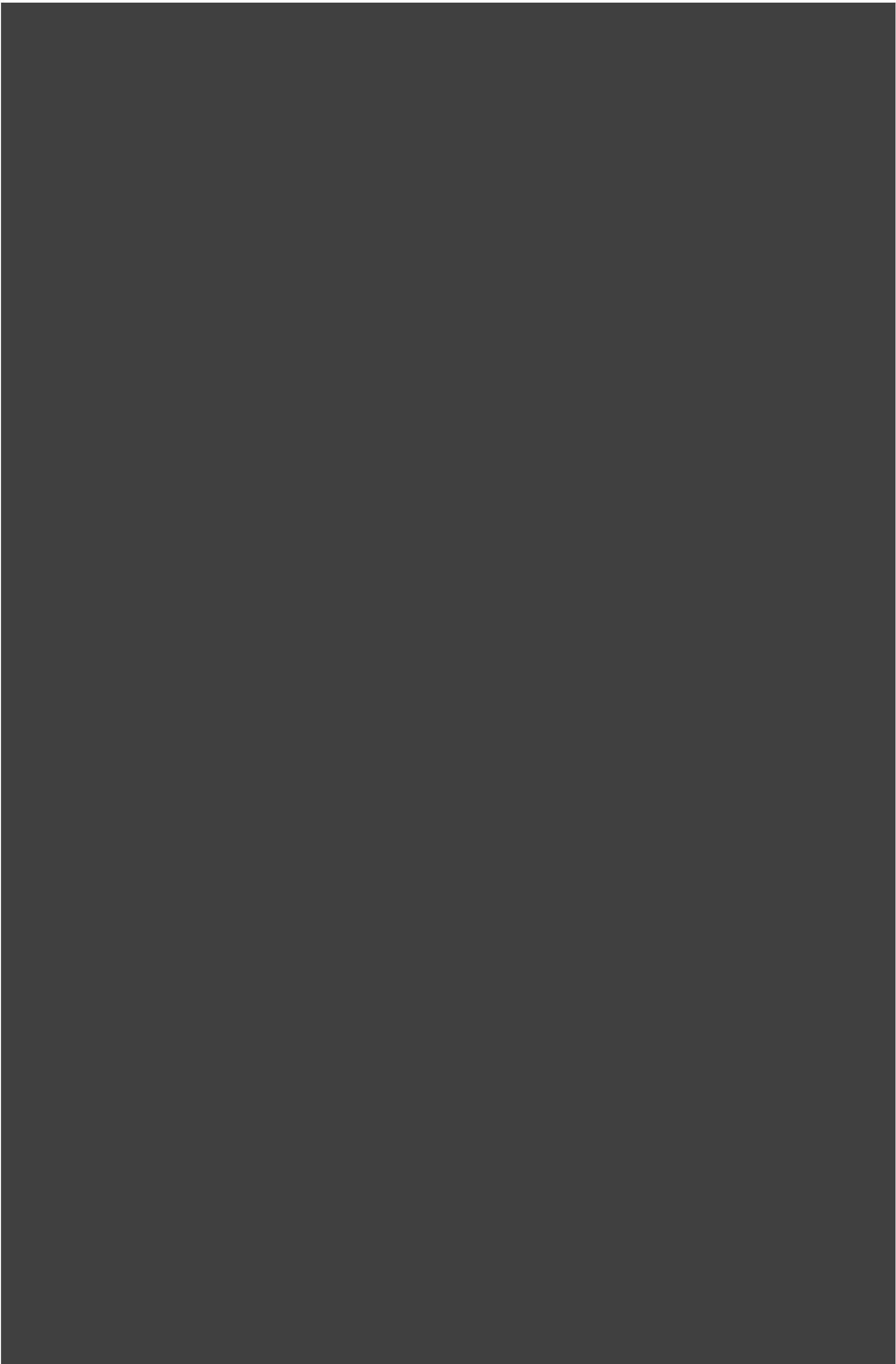
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9. Revisions

1. none

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Appendix A: ATC Project Diagrams



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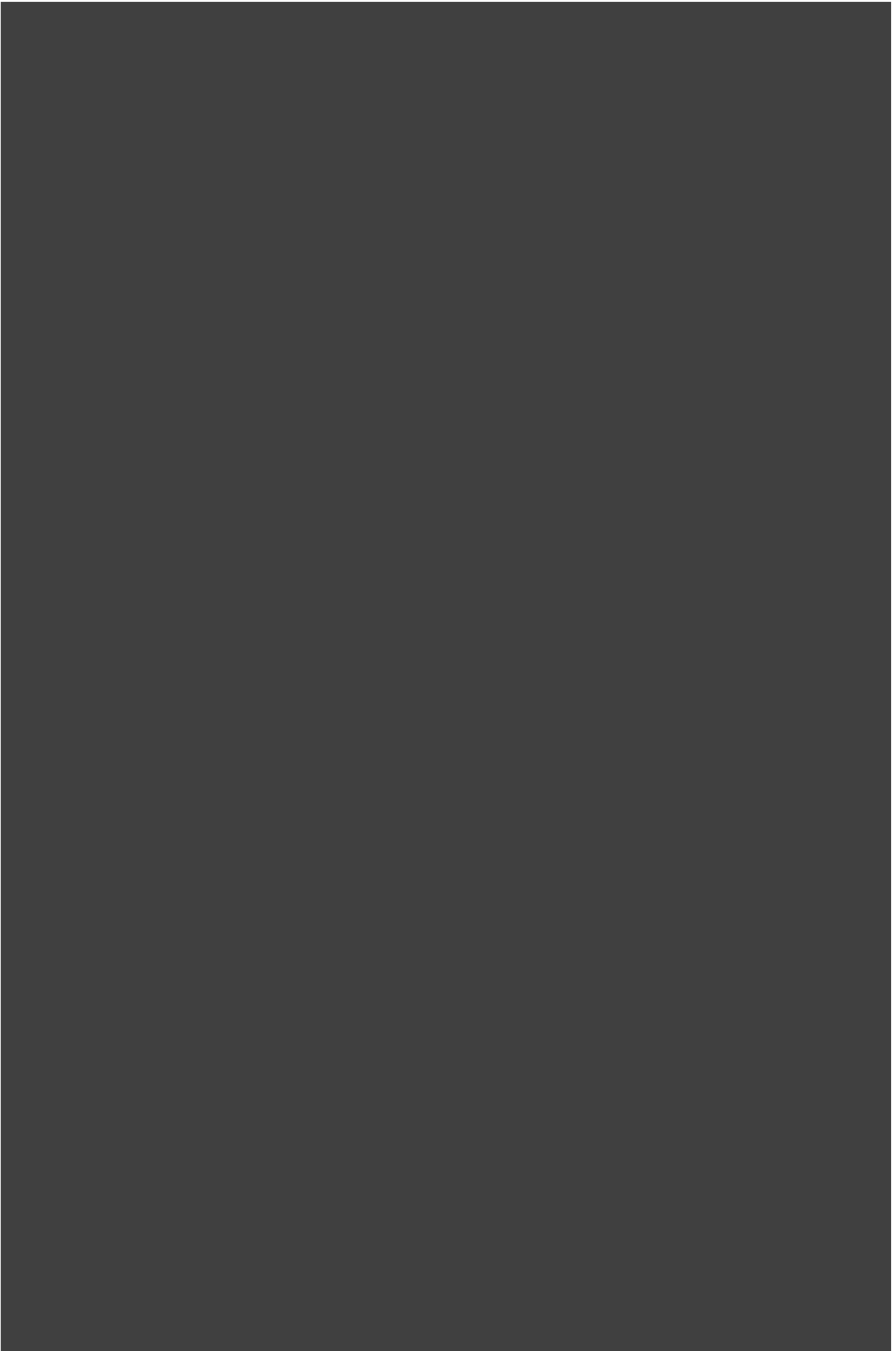
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Figure A1: Alternative 1 (Preferred Project)

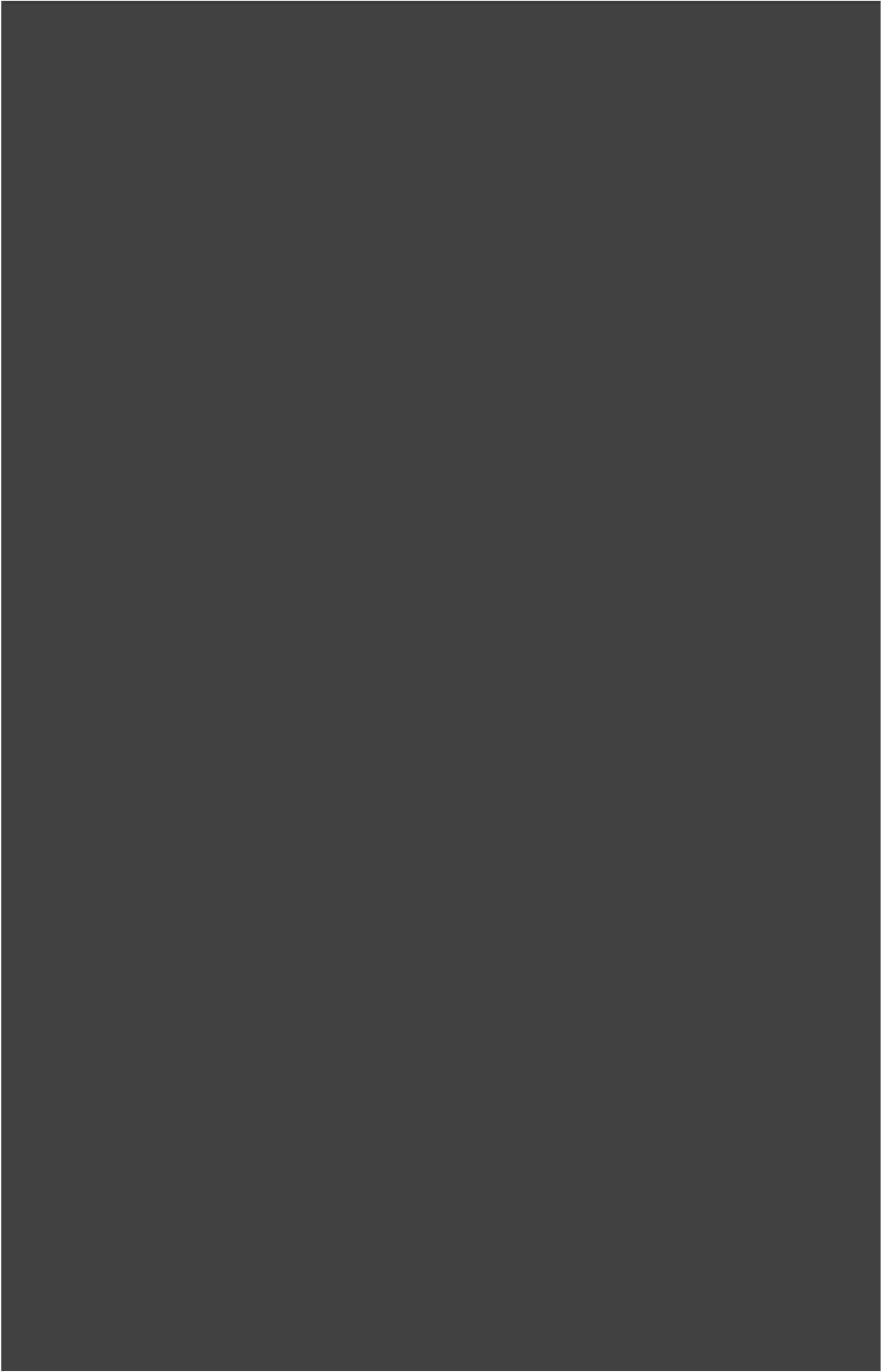
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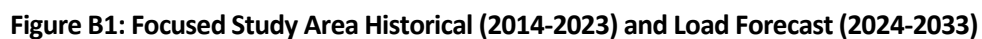
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Alternative 2

Figure A2:

Appendix B: Load Characteristics – Focused Study Area



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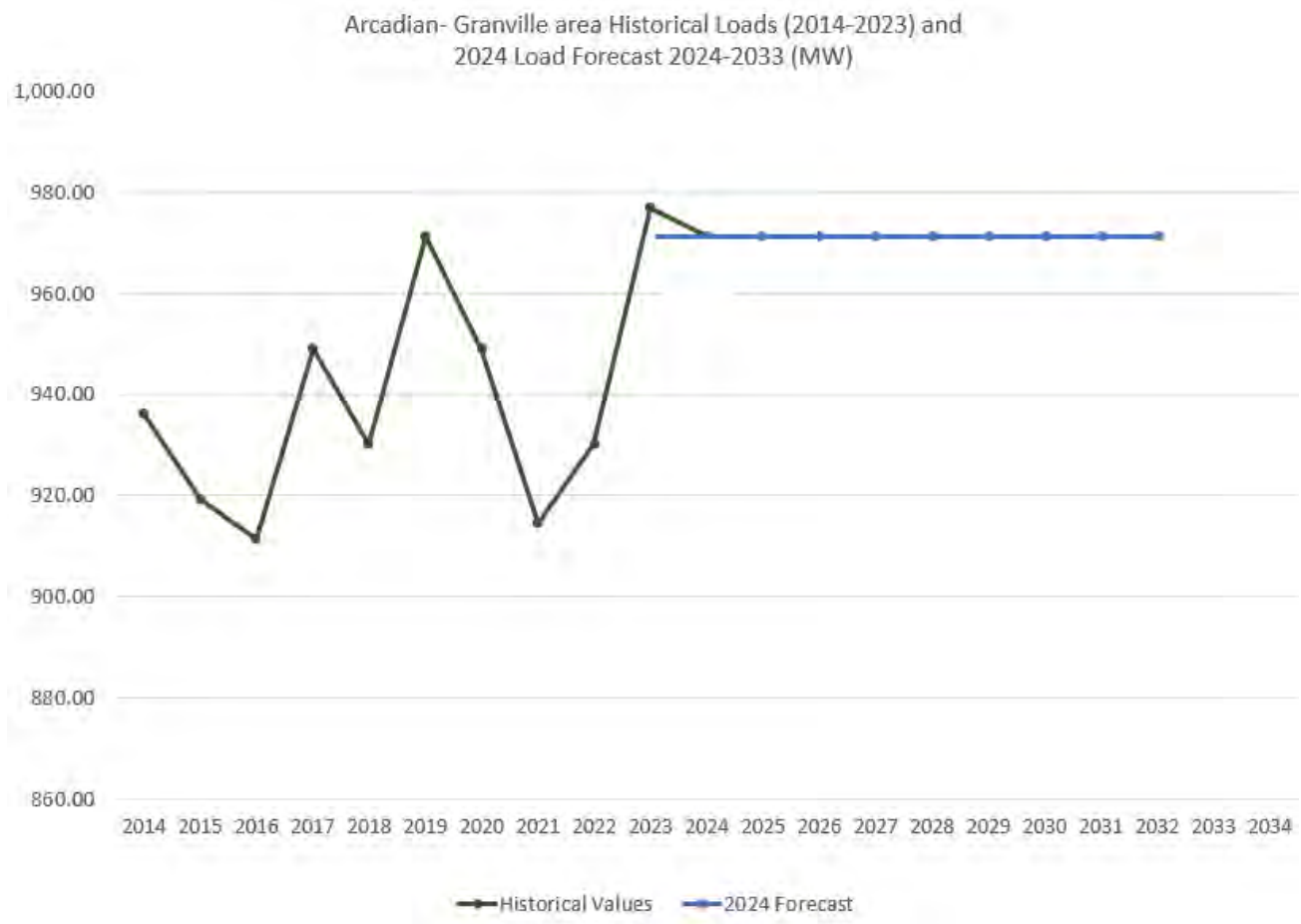


Figure B2: Focused Study Area MW Historical and Load Forecast

Appendix C: Study Assumptions, Criteria & Methodology

C.1 Study Assumptions

C.1.1 Originating Models

For this study, a total of seven study specific models were developed to represent various scenarios. These seven models were based on the following four originating models, from MISO MTEP 2023 series models.

- MISO23_2028 Summer Peak model
- MISO23_2028 Shoulder Average Wind model
- MISO23_2028 Light Load Model
- MISO23_2033 Summer Peak model

C.1.2 Study-specific Models

C.1.2.1 ATC Topology/Project Updates

All four originating study models were modified as necessary to include different generation sensitivities, the new load interconnections, and different proposed projects required to allow the interconnection.

C.1.2.2 Basecase Model Development

The basecase models represents a topology which is updated to include generation that have approved GIA's, the load interconnection requests within the EITM zone and the corresponding "Racine County Western Feed Transmission Line Project" (Docket #137-CE-209).

There is a total of four basecase models as part of the system study developed to determine the project need as follows:

- MISO23_2028_SUM_basecase
- MISO23_2033_SUM_basecase
- MISO23_2028_SHAW_basecase
- MISO23_2028_SLL70_basecase

A sensitivity model was also developed, "MISO23_2028_SHAW_ERG2_basecase" to evaluate the system performance under Elm Road unit outage conditions.

C.1.2.3 Alternative Model Development

The alternative models are developed by adding only the facilities associated with each alternative design. This set of models consists of eight models, developed from the Basecase models listed above in Section C.1.2.2. These cases are as follows:

- MISO23_2028_SUM_MROGVL
- MISO23_2033_SUM_MROGVL
- MISO23_2028_SHAW_MROGVL
- MISO23_2028_SLL70_MROGVL
- MISO23_2028_SUM_Alt2
- MISO23_2033_SUM_Alt2
- MISO23_2028_SHAW_Alt2
- MISO23_2028_SLL70_Alt2

Sensitivity models associated with the alternatives were also developed, "MISO23_2028_SHAW_ERG2_MROGVL" and "MISO23_2028_SHAW_ERG2_Alt2" to evaluate the system performance under Elm Road unit outage conditions.

C.2 Study Criteria

ATC uses NERC Reliability Standards and ATC Planning Criteria to evaluate the reliability impact of each alternative on the transmission system. NERC Reliability Standard TPL-001 planning event contingency categories for facilities 100 kV and above, see section C.4.1 for more details.

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ATC Planning Criteria version 22.3 used in this assessment is consistent with the NERC Standards that were effective when ATC Planning Criteria version 22.3 was developed. ATC Planning Criteria pertinent to the assessment includes the following items:

1. Thermal loadings should not exceed normal ratings under NERC Category P0 conditions,
2. Buses voltages should not be outside of applicable normal limits (typically 95% to 105% of nominal voltage unless otherwise specified) under NERC Category P0 conditions,
3. Thermal loadings should not exceed emergency ratings under other NERC planning event categories (all NERC categories except P0), and
4. Buses voltages should not be outside of applicable emergency limits (typically 90% to 110% of nominal voltage unless otherwise specified) and voltage variation should not be greater than 10% under other NERC Category planning event categories (all NERC categories except P0).

C.3 Study Methodology

The steady state AC power flow simulations conducted for this study were performed using PowerGem's Transmission Adequacy & Reliability Assessment (TARA) software version 2102.1.0.0 64-bit which is accepted industry-wide for power flow analysis.

TARA's contingency analysis simulates user-defined NERC TPL-001 planning events and provides the resulting thermal loadings and bus voltages for a user-defined area. Those results were compared against the thresholds identified in Section C.2.

The key solution options chosen for performing the TARA power flow solution activity are listed below.

Table C.3.1: TARA Solution Activities

Solution Activity	Base Case	AC Con Analysis
Area Interchange	Disabled	
Solution Method	AC Fast Decoupled	
Bus Mismatch Tolerance (MVA)	3	3
Tap Adjustments	Enabled	
PAR Adjustments	Enabled	
Shunt Adjustments	All Enabled	
DC Tap Adjustments	Enabled	
Generator VAR Limit Checking	0 Iterations	
Ratings	RATEA	RATEB
Loading Cutoff	95%	
Flow Change Cutoffs	5 MW/2% Rating	
Voltage Cutoffs	0.005 PU	

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The study specific models were built using Power System Simulation/Engineering (PSS®E, Version 35) program from Siemens Power Technologies, Inc. (PTI). All the models were fully solved with Area Interchange enabled before being using TARA to perform the contingency analysis.

C.3.1 Contingencies Studied

The contingency analysis was performed in the “contingency study area” which incorporates:

- All of ATC’s 345 kV system
- ATC Planning Zones 5, all voltages
- ATC Planning Zone 3 (East of Madison), all voltages
- ATC Planning Zone 3 (Madison and to the west), 100-kV system and above
- ComEd 345kV and 138 kV in northern Illinois

The contingency analysis consisted of simulating NERC TPL-001 Category P0, P1, P2, P3, P5, P6 and P7 contingencies on the summer peak, shoulder models, and light load models.

- P0 – all facilities in service,
- P1 – event resulting in the loss of a single element (generator, transmission circuit, transformer, shunt device, single pole of a DC line),
- P2 – event including opening a line section without a fault, bus section fault, non-bus tie breaker fault, bus-tie breaker fault,
- P3 – loss of a generator unit followed by system adjustments, followed by another P1 event,
- P4 – for steady state power flow simulations, P4 defined contingencies are covered by P2s,
- P5 – for steady state power flow simulations, P5.1 – P5.4 defined contingencies are covered by P1s and P2s. P5.5 is a bus section fault plus Delayed Fault Clearing due to the failure of a non-redundant component of a Protection System protecting the Faulted element to operate as designed,
- P6 – P1 event followed by system adjustments, followed by another P1 event, and
- P7 – any two adjacent circuits on a common structure.

The NERC TPL-001 reliability standard states that the transmission system is required to be evaluated following an extreme disturbance. However, no reinforcement is required by the standard and ATC assess these extreme events annually. NERC FAC-002 standard does not require examination of Extreme Events. Therefore, no extreme event simulations will be performed for this report. ATC may choose to run select extreme events or make observations based on the results of the analysis to consider the robustness of solutions being considered.

Table C.3.2 shows different contingencies studied as defined on NERC Standard TPL-001. Refer to NERC Standard TPL-001 for more details about the Standard requirements.

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Table C.3.2 Contingencies Studied

Category	Initial Condition	Event	Description
P0	Normal System	All Facilities in Service	P0 conditions will be monitored for the study area.
P1 Single Contingency	Normal System	Loss of one of the following:	All applicable P1.1-P1.4 contingencies in the “contingency study area” will be studied. All generators connected to the “contingency study area” will be studied. No P1.5 contingencies will be studied because there are no DC lines in the “contingency study area”.
		1. Generator	
		2. Transmission Circuit	
		3. Transformer	
		4. Shunt Device	
		5. Single Pole DC Line	
P2 Single Contingency	Normal System	1. Opening of a line section w/o a fault	All applicable P2.1 – P2.4 contingencies in “contingency study area” will be studied.
		2. Bus Section Fault	
		3. Internal Breaker Fault (non-Bus-tie Breaker)	
		4. Internal Breaker Fault (Bus-tie Breaker)	
P3 Multiple Contingency	Loss of generator unit followed by System adjustments	Loss of one of the following:	All applicable P3.1 – P3.4 contingencies in “contingency study area” will be studied. No P3.5 contingencies will be studied because there are no DC lines in the “Contingency Study Area”.
		1. Generator	
		2. Transmission Circuit	
		3. Transformer	
		4. Shunt Device	
		5. Single Pole DC Line	

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P4 Multiple Contingency (Fault plus stuck breaker)	Normal System	Delayed Fault Clearing due to the failure of a non-redundant component of a Protection System protecting the Faulted element to operate as designed, for one of the following:	No P4.1-P4.6 contingencies in ATC's portion of the "contingency study area" will be studied because in steady-state analysis these contingencies are equivalent to P2.3 and P2.4 contingencies.
		1. Generator 2. Transmission Circuit 3. Transformer 4. Shunt Device 5. Bus Section 6. Loss of multiple elements caused by a stuck breaker (Bus-tie Breaker) attempting to clear a Fault on the associated bus	
P5 Multiple Contingency Fault plus relay failure to operate)	Normal System	Delayed Fault Clearing due to the failure of a non-redundant relay protecting the Faulted element to operate as designed, for one of the following:	No P5.1, P5.2 and P5.4 contingencies in ATC portion of the "contingency study area" will be studied because all BES generators, transmission circuits and shunt devices have redundant relay protection. Therefore, in steady-state analysis, these contingencies will be equivalent to P1.1, P1.2 and P1.4 contingencies. All transmission transformers in ATC have redundant relay protection except Oak Creek 230/138 kV transformer. This transformer contingency outages the same elements as the P2.3 contingency for this transformer's high side breaker (851). Therefore, no P5.3 contingencies will be studied. All applicable P5.5 contingencies in the ATC portion of the "contingency study area" will be studied.
		1. Generator 2. Transmission Circuit 3. Transformer 4. Shunt Device 5. Bus Section	
P6 Multiple Contingency (Two overlapping singles)	Loss of one of the following followed by System adjustments. 1. Transmission Circuit 2. Transformer 3. Shunt Device 4. Single pole of a DC line	Loss of one of the following: 1. Transmission Circuit 2. Transformer 3. Shunt Device 4. Single pole of a DC line	All applicable P6.1 – P6.3 contingencies in "contingency study area" below will be studied. No P6.4 contingencies will be studied because there are no DC lines in the "contingency study area".
P7 Multiple Contingency (Common Structure)	Normal System	The loss of: 1. Any two adjacent (vertically or horizontally) circuits on common structure 2. Loss of a bipolar DC line	All applicable P7.1 contingencies in "contingency study area" below will be studied. No P7.2 contingencies will be studied because there are no DC lines in the "contingency study area".

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C.3.2 Monitored System

All 138 kV and above transmission facilities within ATC Monitored Areas shown in Figure D.1 will be monitored.

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Appendix D: Planning Study Area



Figure D.1 Monitored Study Area

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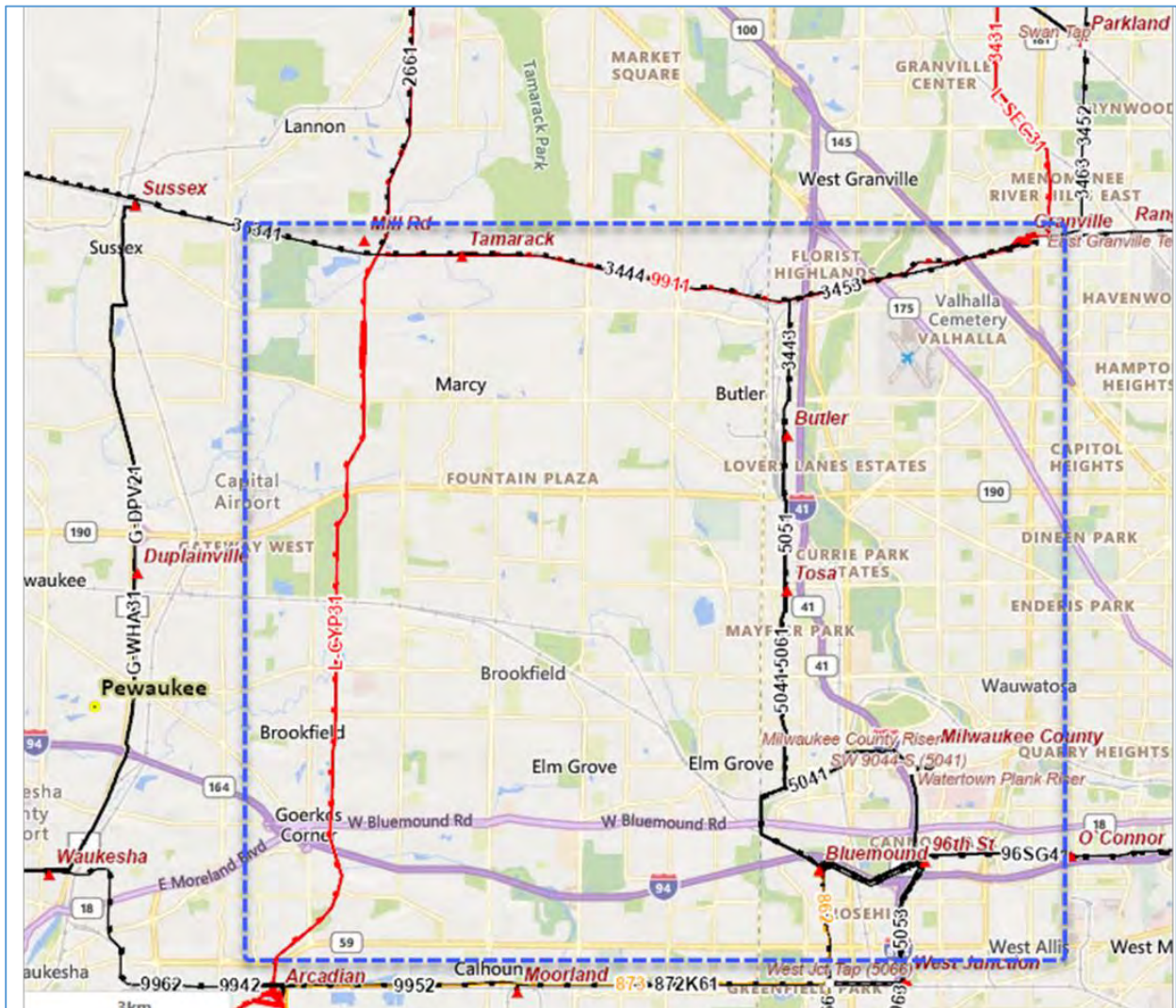


Figure D.2 Focused Study Area

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Appendix E: Steady State Contingency Analyses Results

Table E1.1.1: System Intact, 2028 Summer Peak - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E1.1.2: System Intact, 2028 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E1.2.1: System Intact, 2033 Summer Peak - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1488	107.56	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		-	266	100.68	N. Lake Geneva Area Limitation

Table E1.2.2: System Intact, 2033 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E1.3.1: System Intact, 2028 Shoulder - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E1.3.2: System Intact, 2028 Shoulder - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E1.4.1: System Intact, 2028 Light Load - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1554	106.23	Elm Road/Oak Creek Outlet study

Table E1.4.2: System Intact, 2028 Light Load - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E1.5.1: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E1.5.2: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E2.1.1: Single Event Analysis, 2028 Summer Peak - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1		245.2	175	140.11	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		216.5	162	133.61	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		566	441	128.34	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		216.5	175	123.7	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		414.4	335	123.7	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		196.8	162	121.47	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		526.1	441	119.29	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		292.4	246	118.84	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		292.3	246	118.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		262.7	223	117.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		262.7	223	117.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		262.7	223	117.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		262.7	223	117.79	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		393.3	335	117.4	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		261.4	223	117.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		261.4	223	117.2	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1116.2	954	117	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		589.7	504	116.99	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		589.6	504	116.99	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		260.7	223	116.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		260.6	223	116.88	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		189	162	116.66	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		265	229	115.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		265	229	115.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		263.7	229	115.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		263	229	114.85	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1		383.5	335	114.48	MRO-GVL Project Target
699523 WHTWTR3 138 699950 LKHD TP 138 1		278.4	246	113.16	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		278.4	246	113.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.2	266	112.49	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1		196.8	175	112.45	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		297.5	266	111.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.5	266	111.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.8	266	111.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		232.8	209	111.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		232.8	209	111.39	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		179.5	162	110.8	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1		231.5	209	110.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		230.8	209	110.43	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		367.5	335	109.7	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		367.5	335	109.7	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		291.7	266	109.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.7	266	109.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.7	266	109.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.7	266	109.66	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		367.3	335	109.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		367.3	335	109.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		367.3	335	109.64	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		289.7	266	108.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.2	266	108.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.2	266	108.73	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		269.6	248	108.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.9	266	108.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.8	266	108.58	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		268.9	248	108.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		268.7	248	108.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		268.7	248	108.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.9	266	108.24	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		362.3	335	108.15	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		285.8	266	107.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.5	266	106.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.4	266	106.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.3	266	106.89	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		264.8	248	106.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		283.7	266	106.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		263.9	248	106.42	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1		469.3	441	106.42	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		469.3	441	106.42	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		469.2	441	106.4	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		469.2	441	106.4	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		468.4	441	106.22	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		282.4	266	106.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		282.4	266	106.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.4	266	105.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281	266	105.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280	266	105.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280	266	105.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		279.2	266	104.97	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		351.6	335	104.94	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		278.5	266	104.7	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		259.5	248	104.65	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		168.4	162	103.98	MRO-GVL Project Target

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		168.4	162	103.98	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		168.4	162	103.95	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		168.4	162	103.95	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		167.9	162	103.65	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		275.6	266	103.63	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346.2	335	103.33	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346.2	335	103.33	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346	335	103.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346	335	103.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346	335	103.29	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		453.4	441	102.82	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		453.4	441	102.82	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		251.5	246	102.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		251.4	246	102.21	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		250.8	246	101.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.7	246	101.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		248.5	246	101.01	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		338.3	335	101	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		338.3	335	101	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		225.2	223	100.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		225.2	223	100.98	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		338.3	335	100.97	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		338.3	335	100.97	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		225.2	223	100.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		225.2	223	100.97	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1		445.2	441	100.96	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		445.2	441	100.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		337.6	335	100.78	MRO-GVL Project Target

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		249.7	248	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		224.2	223	100.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		224.2	223	100.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		224	223	100.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		224	223	100.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		224	223	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		224	223	100.45	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1		639.5	639	100.07	Cypress Area 345 kV Uprate study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		954.4	954	100.04	MRO-GVL Project Target

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Table E2.1.2: Single Event Analysis, 2028 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8578	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8578	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8578	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8578	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.858	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.858	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.858	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.858	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.858	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.858	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.858	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.858	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8581	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8583	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8583	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8583	LTC reverse flow mitigation

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Table E2.2.1: Single Event Analysis, 2033 Summer Peak - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		222.4	162	137.29	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		231	175	132	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		577.7	441	131.01	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		222.4	175	127.07	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		424	335	126.56	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		204.2	162	126.04	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1200.7	954	125.86	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		302.5	246	122.97	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		302.5	246	122.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		274.2	223	122.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		274.2	223	122.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		274.2	223	122.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		274.2	223	122.94	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1		540.8	441	122.63	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		272.8	223	122.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		272.8	223	122.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		272.1	223	122.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		272.1	223	122.03	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1		410.9	340	120.84	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		410.9	340	120.84	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		410.8	340	120.84	230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		276.5	229	120.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		276.5	229	120.75	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		971.9	806	120.58	PLPL81/W30 Project and 230 kV study
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		606.6	504	120.36	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		606.6	504	120.35	MRO-GVL Project Target

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		402.9	335	120.28	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		275.2	229	120.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		274.5	229	119.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		317.3	266	119.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		315.6	266	118.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		315.6	266	118.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		314.9	266	118.37	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		395.4	335	118.04	MRO-GVL Project Target
699523 WHTWTR3 138 699950 LKHD TP 138 1		288.5	246	117.28	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		288.5	246	117.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		244.1	209	116.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		244.1	209	116.79	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1		204.1	175	116.63	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1		242.8	209	116.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		242.1	209	115.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307.7	266	115.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307.7	266	115.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307.7	266	115.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307.7	266	115.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307.7	266	115.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		306.9	266	115.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		306.8	266	115.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		305.2	266	114.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		305.2	266	114.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.9	266	114.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		302.4	266	113.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		302.3	266	113.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.8	266	113.45	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		281.2	248	113.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		280.7	248	113.2	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		280.3	248	113.04	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		280.3	248	113.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		300.5	266	112.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.7	266	112.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.4	266	112.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.4	266	112.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.9	266	111.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.9	266	111.99	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		374.2	335	111.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		297.2	266	111.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.7	266	111.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.5	266	111.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.3	266	111.41	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		276.2	248	111.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		275.4	248	111.04	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		179.3	162	110.7	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		271.3	248	109.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291	266	109.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290	266	109.01	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1		258.2	237	108.94	Elm Road/Oak Creek Outlet study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1038.6	954	108.86	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		478.1	441	108.41	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		478.1	441	108.4	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		478.1	441	108.4	MRO-GVL Project Target
698857 OC CRK8 230 693694 OAK CK LT884 345 1		368.5	340	108.39	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		368.5	340	108.39	230 kV study

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Appendix D, Exhibit 1
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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1		478	441	108.39	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		478	441	108.39	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.6	223	108.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.6	223	108.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.6	223	108.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.6	223	108.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		240.7	223	107.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		240.7	223	107.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		263.9	246	107.29	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1		364.4	340	107.19	230 kV study
699085 NLG 138 138 699086 ELK 138 138 1		263.3	246	107.05	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.6	1146	106.95	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.6	1146	106.94	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.4	1146	106.93	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.3	1146	106.92	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.3	1146	106.92	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.2	1146	106.91	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1222.8	1146	106.71	Elm Road/Oak Creek Outlet study
698865 BLUMND6 138 699268 BUTLER 138 2		172.9	162	106.7	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		172.9	162	106.7	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1222.8	1146	106.7	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1222.8	1146	106.7	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		262.5	246	106.7	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1222.6	1146	106.69	Elm Road/Oak Creek Outlet study

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		172.8	162	106.69	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		172.8	162	106.69	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		172.8	162	106.66	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1220.9	1146	106.54	Elm Road/Oak Creek Outlet study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		244	229	106.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		244	229	106.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		237.5	223	106.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		237.5	223	106.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243.4	229	106.3	N. Lake Geneva Area Limitation

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Table E2.2.1: Single Event Analysis, 2033 Summer Peak - Before Project, Thermal limitations - continued

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243.4	229	106.3	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1216.4	1146	106.14	Elm Road/Oak Creek Outlet study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243	229	106.12	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1		250.3	237	105.59	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1209.8	1146	105.56	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1207.3	1146	105.35	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1206.9	1146	105.32	Elm Road/Oak Creek Outlet study
699331 GRANVL 4 138 699492 TOSA-W 138 1		352.5	335	105.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		352.5	335	105.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		352.4	335	105.18	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		352.4	335	105.18	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		352.4	335	105.18	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		260.7	248	105.11	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1		670.4	639	104.91	Cypress Area 345 kV Uprate study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1000.8	954	104.91	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		169.9	162	104.88	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		278.9	266	104.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		239.9	229	104.75	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		259.5	248	104.65	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1195.1	1146	104.28	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1195.1	1146	104.28	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		277.3	266	104.26	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1193.7	1146	104.16	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1193.6	1146	104.15	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		254.9	246	103.62	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1185.8	1146	103.48	Elm Road/Oak Creek Outlet study

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1185.6	1146	103.45	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1185.6	1146	103.45	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1185.3	1146	103.43	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		254.4	246	103.41	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		985.6	954	103.31	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		256	248	103.22	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		256	248	103.22	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		345.5	335	103.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		345.5	335	103.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		345.5	335	103.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		345.5	335	103.13	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		345.5	335	103.13	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		253.5	246	103.03	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		830.4	806	103.03	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1		253.3	246	102.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		253.2	246	102.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		255.2	248	102.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		253	246	102.86	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		828.9	806	102.85	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1		253	246	102.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		252.9	246	102.82	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1		452.9	441	102.69	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		452.8	441	102.67	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		254.2	248	102.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		272	266	102.26	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		975.4	954	102.24	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		253.4	248	102.16	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		271.7	266	102.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		253.2	248	102.1	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		973.6	954	102.05	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		253	248	102.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		252.9	248	101.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		252.9	248	101.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		178	175	101.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		177.9	175	101.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		177.8	175	101.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		177.8	175	101.6	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		326.1	321	101.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		177.8	175	101.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		177.7	175	101.56	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1162.9	1146	101.47	Elm Road/Oak Creek Outlet study
698879 SGR CK4 138 699360 NLK GV T 138 1		212	209	101.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		212	209	101.42	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		325.5	321	101.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211.8	209	101.33	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211.8	209	101.33	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1505.2	1488	101.16	Oak Creek Asset Renewal Project
698879 SGR CK4 138 699360 NLK GV T 138 1		211	209	100.97	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1		400.1	397	100.78	230 kV study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		960.6	954	100.69	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		267.5	266	100.58	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		336.6	335	100.49	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		267.2	266	100.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.2	266	100.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.2	266	100.45	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.6	175	100.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.6	175	100.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.6	175	100.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.6	175	100.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.5	175	100.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.5	175	100.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.4	175	100.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.4	175	100.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.4	175	100.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.4	175	100.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		175.4	175	100.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		175.4	175	100.22	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1		335.6	335	100.19	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1		441.4	441	100.09	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		441.4	441	100.09	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		954.8	954	100.09	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		954.8	954	100.09	MRO-GVL Project Target

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Table E2.2.2: Single Event Analysis, 2033 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8572	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8572	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8572	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8572	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8575	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E2.3.1: Single Event Analysis, 2028 Shoulder - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		198.5	162	122.55	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		198.7	175	113.53	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		198.4	175	113.36	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		182.8	162	112.86	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		900.2	806	111.69	PLPL81/W30 Project and 230 kV study
699268 BUTLER 138 699327 GRANVL 5 138 1		484.7	441	109.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		360	335	107.45	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1017.6	954	106.66	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		280.5	266	105.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		279.4	266	105.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		279.4	266	105.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278.7	266	104.76	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1		182.7	175	104.38	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		232.6	223	104.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		232.6	223	104.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		232.6	223	104.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		232.6	223	104.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		231.8	223	103.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		231.8	223	103.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		231.3	223	103.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		231.3	223	103.73	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		346.8	335	103.51	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		452.7	441	102.66	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		273	266	102.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		234.9	229	102.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		234.9	229	102.59	N. Lake Geneva Area Limitation

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Appendix D, Exhibit 1
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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		272.3	266	102.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		272.2	266	102.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		234.2	229	102.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		233.7	229	102.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		213.2	209	102.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		213.2	209	102.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.7	266	101.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.7	266	101.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.7	266	101.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.7	266	101.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		212.5	209	101.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		212	209	101.43	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		249.2	246	101.29	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		249.2	246	101.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		269.4	266	101.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		269.3	266	101.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		269.3	266	101.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.5	266	100.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.5	266	100.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.3	266	100.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.3	266	100.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267	266	100.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.5	266	100.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.5	266	100.19	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		335.3	335	100.1	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		266.1	266	100.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266	266	100.01	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E2.3.2: Single Event Analysis, 2028 Shoulder - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8682	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8682	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8682	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8682	LTC reverse flow mitigation

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Table E2.4.1: Single Event Analysis, 2028 Light Load - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		1097.2	806	136.12	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1		302.3	246	122.87	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1		292.4	246	118.86	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		879.2	806	109.09	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		868.2	806	107.72	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1301.5	1231	105.73	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1297.1	1231	105.37	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1292.3	1231	104.98	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		832.7	806	103.31	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1268.7	1231	103.06	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1268.6	1231	103.06	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1268.5	1231	103.05	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1268.5	1231	103.05	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		827	806	102.61	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		827	806	102.61	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1260.9	1231	102.43	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1260.6	1231	102.41	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1260.6	1231	102.41	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1260.3	1231	102.38	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1237.1	1231	100.49	Elm Road/Oak Creek Outlet study

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E2.4.2: Single Event Analysis, 2028 Light Load - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E2.5.1: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		229.5	162	141.64	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		242.4	175	138.51	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		229.4	175	131.06	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		209.6	162	129.4	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		547	441	124.03	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1		409	335	122.09	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		209.5	175	119.72	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		395.7	335	118.13	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		1122	954	117.61	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1		506.6	441	114.87	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		300.9	266	113.12	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1		377.8	335	112.77	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		299.8	266	112.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.8	266	112.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.1	266	112.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.5	266	110.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.5	266	110.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.5	266	110.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.5	266	110.33	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		178.6	162	110.23	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		292.1	266	109.81	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		269.9	246	109.72	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		269.9	246	109.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.3	266	109.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.3	266	109.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		244.1	223	109.48	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		244.1	223	109.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.2	266	109.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		244.1	223	109.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		244.1	223	109.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.1	266	109.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.1	266	109.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290.5	266	109.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290.4	266	109.16	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		176.8	162	109.13	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		243.2	223	109.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		243.2	223	109.07	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		176.6	162	109	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		176.6	162	109	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		176.5	162	108.97	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		176.5	162	108.97	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		289.7	266	108.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		242.9	223	108.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		242.8	223	108.89	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1		364.5	335	108.8	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1		694	639	108.61	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		288.8	266	108.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.6	266	108.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.5	266	108.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.5	266	108.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		246.5	229	107.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		246.5	229	107.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		224.7	209	107.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		224.7	209	107.49	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2		173.8	162	107.3	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		245.6	229	107.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		245.2	229	107.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		223.8	209	107.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.6	266	107.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.6	266	107.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		223.4	209	106.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.2	266	106.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		283.7	266	106.65	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1		670.9	639	104.99	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		279.2	266	104.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278.9	266	104.86	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		256.4	246	104.21	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		256.3	246	104.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		275.5	266	103.57	N. Lake Geneva Area Limitation
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		520.9	504	103.35	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1		520.8	504	103.34	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		254.2	246	103.32	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		166	162	102.5	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		166	162	102.47	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		972.9	954	101.98	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		972	954	101.88	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1		249.8	246	101.55	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2		163.9	162	101.2	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2		163.9	162	101.2	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		176.7	175	100.97	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1		962.7	954	100.92	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		176.5	175	100.85	MRO-GVL Project Target

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1		176.5	175	100.85	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		176.4	175	100.83	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1		176.4	175	100.83	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1		249	248	100.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.3	266	100.1	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E2.5.2: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation

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Table E3.1.1: Multiple Event Analysis “P3”, 2028 Summer Peak - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			413.9	335	123.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			413.9	335	123.54	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			328.6	266	123.52	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			413.8	335	123.52	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			413.8	335	123.52	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.5	223	122.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.5	223	122.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.5	223	122.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.4	223	122.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.1	266	122.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.8	229	120.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.8	229	120.44	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			193.2	162	119.24	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.19	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			193.1	162	119.19	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	118.81	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	118.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.3	266	118.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.12	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			520.4	441	118.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			520.3	441	117.98	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.6	335	117.79	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.6	335	117.79	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.5	335	117.78	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.5	335	117.78	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			393.5	335	117.45	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			393.5	335	117.45	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			311.8	266	117.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.7	266	117.18	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			392.3	335	117.09	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			392.3	335	117.09	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			392.2	335	117.08	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			392.2	335	117.08	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			392.1	335	117.05	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			392.1	335	117.05	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			243.4	209	116.47	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.4	209	116.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.5	266	115.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.4	266	115.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.4	223	114.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.4	223	114.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.2	223	114.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.1	223	114.86	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	113.13	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	113.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.8	229	112.99	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.3	335	112.93	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.2	335	112.9	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.5	229	112.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.9	209	112.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.7	209	112.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.7	209	112.77	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			299.8	266	112.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.5	223	112.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.5	223	112.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.3	223	112.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.3	223	112.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.81	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			492.9	441	111.77	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.3	266	111.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.7	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			373.9	335	111.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			373.9	335	111.61	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.7	223	111.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.7	223	111.5	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			491.7	441	111.5	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.6	223	111.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.6	223	111.46	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			373	335	111.35	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			373	335	111.35	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			373	335	111.33	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			373	335	111.33	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			295.9	266	111.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.6	266	111.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.6	266	111.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.6	266	111.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.09	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			489.8	441	111.07	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			489.8	441	111.07	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			372	335	111.03	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			372	335	111.03	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			179.9	162	111.02	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			295.2	266	110.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.2	266	110.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.9	266	110.88	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			179.4	162	110.71	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			370.8	335	110.69	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			370.8	335	110.69	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			487.8	441	110.61	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			487.7	441	110.59	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			179	162	110.49	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178.9	162	110.44	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.9	229	110.42	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			193.2	175	110.42	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1			193.2	175	110.38	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.7	229	110.34	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			178.3	162	110.04	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178.3	162	110.04	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251	229	109.61	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.57	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			482.2	441	109.34	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			482.1	441	109.32	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			176.8	162	109.12	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			176.7	162	109.08	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			226.6	209	108.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.3	209	108.28	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362	335	108.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.9	335	108.03	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.9	335	108.03	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			475	441	107.7	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			474.1	441	107.51	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			474	441	107.48	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			174.1	162	107.46	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			174	162	107.42	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.5	223	107.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.38	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.17	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.17	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.8	335	106.49	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356.7	335	106.47	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.6	335	106.46	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356	335	106.28	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			355	335	105.96	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			354.9	335	105.95	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.9	223	105.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.9	223	105.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.8	209	105.65	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			465.8	441	105.63	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			465.8	441	105.62	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.6	209	105.56	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			464.9	441	105.42	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.6	335	105.25	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.6	335	105.25	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.5	441	105.1	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.1	441	105.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.1	441	105	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.1	441	105	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.8	441	104.95	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.8	441	104.95	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			462.6	441	104.89	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.5	441	104.88	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.5	441	104.88	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.4	441	104.86	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			219	209	104.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.9	209	104.73	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			460.3	441	104.37	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			460.2	441	104.36	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			459.4	441	104.18	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			459.2	441	104.13	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			258	248	104.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.2	229	104.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258	248	104.02	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			458	441	103.85	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.2	223	103.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.2	223	103.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.2	223	103.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.2	223	103.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.9	248	103.17	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			166.9	162	103.01	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166.8	162	102.99	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166.7	162	102.89	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			179.9	175	102.81	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			254.9	248	102.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.9	248	102.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273	266	102.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273	266	102.64	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			179.4	175	102.52	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			166.1	162	102.5	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166	162	102.49	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			179.3	175	102.44	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.9	162	102.41	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			179.2	175	102.4	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			-	335	102.33	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			-	335	102.3	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.7	162	102.28	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	101.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	101.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.8	248	101.93	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			178.4	175	101.92	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			178.3	175	101.91	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.1	162	101.89	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165	162	101.86	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341	335	101.78	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341	335	101.78	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.8	335	101.73	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.8	335	101.73	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			270.6	266	101.72	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.8	335	101.72	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.8	335	101.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			270.6	266	101.71	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.71	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.71	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.7	MRO-GVL Project Target

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Appendix D, Exhibit 1
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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.7	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.7	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.7	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.6	335	101.68	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.6	335	101.68	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.6	223	101.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.5	223	101.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.5	223	101.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.5	223	101.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.5	229	101.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.4	223	101.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.5	229	101.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.4	223	101.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.4	223	101.51	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			177.3	175	101.32	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			177.2	175	101.28	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			268.8	266	101.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	101.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.92	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			163.4	162	100.88	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163.4	162	100.85	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.83	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			163.3	162	100.83	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163	162	100.64	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			209.9	209	100.44	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			442.8	441	100.41	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			162.4	162	100.25	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304.7	304	100.23	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304.7	304	100.22	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			335.3	335	100.09	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			266.1	266	100.05	N. Lake Geneva Area Limitation

Table E3.1.2: Multiple Event Analysis “P3”, 2028 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

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Table E3.2.1: Multiple Event Analysis “P3”, 2033 Summer Peak - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			344.6	266	129.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.1	266	128.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.5	223	127.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.5	223	127.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.1	223	127.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.1	223	127.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.9	229	125.28	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.5	229	125.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.9	223	124.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.9	223	124.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.6	223	124.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.6	223	124.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.2	223	124.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.2	223	124.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			329.5	266	123.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			328.7	266	123.57	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	122.95	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	122.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327	266	122.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.2	266	122.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.3	229	122.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280	229	122.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.9	266	122.14	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			197.6	162	121.96	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			324.3	266	121.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.3	209	121.68	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.9	209	121.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			196.7	162	121.4	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.9	223	120.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.6	223	120	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.6	223	120	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			528.2	441	119.77	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			526.4	441	119.35	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			317.4	266	119.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.9	223	119.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.9	266	119.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.6	266	118.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.4	266	118.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.8	209	118.55	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			397.1	335	118.53	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			397.1	335	118.53	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			247.5	209	118.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.9	266	118.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.6	266	118.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.1	209	118.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.4	266	118.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247	209	118.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.4	266	118.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247	209	118.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.9	209	118.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.12	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.1	266	118.08	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			395.5	335	118.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			395.5	335	118.05	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.2	229	118	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.8	266	117.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.6	266	117.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270	229	117.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.6	266	117.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.5	266	117.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.3	266	117.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.1	266	117.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.1	266	117.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313	266	117.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.9	266	117.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262	223	117.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262	223	117.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.9	223	117.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.9	223	117.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.9	266	117.26	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	117.26	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	117.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.7	266	117.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.7	266	117.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.6	266	117.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.3	229	117.14	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.2	229	117.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.8	266	116.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			260.3	223	116.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			260.3	223	116.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			260.2	223	116.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			260.2	223	116.67	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			187.5	162	115.76	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.4	229	115.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.3	229	115.41	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			186.7	162	115.23	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			507.5	441	115.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			384.9	335	114.9	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			384.3	335	114.72	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			384.3	335	114.72	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			505.8	441	114.69	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.6	229	114.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.5	229	114.64	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			383.5	335	114.47	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			382.4	335	114.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			382.4	335	114.14	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			184.4	162	113.83	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			237.8	209	113.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.6	209	113.67	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			501.3	441	113.66	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			500.4	441	113.46	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			183.8	162	113.45	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.4	335	113.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.4	335	113.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.4	335	113.25	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.4	335	113.25	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			498.5	441	113.04	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			498.5	441	113.03	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			197.6	175	112.9	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			235.9	209	112.89	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.9	209	112.86	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			182.7	162	112.76	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			182.7	162	112.76	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.6	335	112.73	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.6	335	112.73	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.2	223	112.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.2	223	112.63	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.1	335	112.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.1	335	112.57	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.53	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			196.7	175	112.38	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			375.8	335	112.18	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			375.8	335	112.18	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			374.2	335	111.7	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			374.2	335	111.7	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.6	266	111.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.1	209	111.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.7	223	111.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.7	223	111.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.1	209	111.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.5	229	110.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.3	223	110.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.2	223	110.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.9	223	110.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.9	223	110.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.4	209	110.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.3	209	110.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.19	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			368.6	335	110.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			483.8	441	109.7	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			367.2	335	109.62	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			482.8	441	109.48	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			482.7	441	109.45	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250	229	109.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243	223	108.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243	223	108.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.9	223	108.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.7	223	108.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.1	266	108.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.1	266	108.67	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			363.7	335	108.57	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.6	229	108.56	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.7	335	108.56	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.3	229	108.42	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.2	335	108.41	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			363.1	335	108.4	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			363.1	335	108.4	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1034.1	954	108.39	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			268.5	248	108.26	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			362.3	335	108.14	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1031.2	954	108.09	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.09	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.1	335	108.08	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			268	248	108.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.9	266	107.85	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			361.2	335	107.82	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			361.2	335	107.82	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			286.8	266	107.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.6	266	107.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.6	266	107.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267	248	107.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	107.35	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.16	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.16	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			187.5	175	107.16	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.3	229	107.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	107.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			284.7	266	107.05	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.1	229	107.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.4	248	107	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.6	266	107	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			471.9	441	107	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.8	441	106.99	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.97	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.95	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.95	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.94	Elm Road/Oak Creek Outlet study
699268 BUTLER 138 699327 GRANVL 5 138 1			471.6	441	106.94	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.6	441	106.94	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.93	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.92	Elm Road/Oak Creek Outlet study
699268 BUTLER 138 699327 GRANVL 5 138 1			471.4	441	106.9	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.3	441	106.88	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.3	441	106.87	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.3	441	106.87	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.2	441	106.85	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.9	335	106.84	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.9	335	106.84	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.9	335	106.83	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.9	335	106.83	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			264.9	248	106.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.72	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.71	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.71	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.71	Elm Road/Oak Creek Outlet study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			-	266	106.71	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.7	Elm Road/Oak Creek Outlet study
698864 BLUMND5 138 699268 BUTLER 138 1			186.7	175	106.67	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.55	Elm Road/Oak Creek Outlet study
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.4	335	106.4	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.4	335	106.4	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			263.8	248	106.39	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			468.9	441	106.32	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.7	335	106.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.7	335	106.19	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	106.16	Elm Road/Oak Creek Outlet study
699268 BUTLER 138 699327 GRANVL 5 138 1			468	441	106.13	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.4	209	105.96	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			467	441	105.91	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.5	248	105.43	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	105.41	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	105.39	Elm Road/Oak Creek Outlet study
698864 BLUMND5 138 699268 BUTLER 138 1			184.4	175	105.37	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			261.2	248	105.31	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463.4	441	105.07	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			183.8	175	105.01	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.81	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			461.5	441	104.66	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			182.7	175	104.39	MRO-GVL Project Target

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1			182.7	175	104.39	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	104.31	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	104.31	Elm Road/Oak Creek Outlet study
698879 SGR CK4 138 699360 NLK GV T 138 1			218	209	104.29	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			168.9	162	104.25	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	104.21	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	104.2	Elm Road/Oak Creek Outlet study
698090 BOL 138 138 699086 ELK 138 138 1			258.4	248	104.18	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.1	248	104.06	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.5	335	103.72	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.2	335	103.63	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.2	335	103.63	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.63	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.62	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.62	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.9	162	103.62	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.9	162	103.62	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.9	162	103.62	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.58	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.58	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.56	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	103.51	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1	-	1488	103.48	Elm Road/Oak Creek Outlet study		

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	103.48	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	103.46	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.46	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.1	209	103.41	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			346.1	335	103.32	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			454.6	441	103.08	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.06	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			167	162	103.06	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.7	223	103.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.7	223	103.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.7	223	103	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.7	223	102.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.82	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.1	335	102.72	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.1	335	102.72	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			452.7	441	102.65	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			452.4	441	102.59	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			452.4	441	102.58	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			977.7	954	102.48	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			976.8	954	102.39	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			342.6	335	102.26	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.9	335	102.07	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.1	209	101.98	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			165.2	162	101.98	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.7	954	101.96	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.1	209	101.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213	209	101.94	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.2	954	101.91	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.1	223	101.85	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			449.1	441	101.85	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.1	223	101.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.1	223	101.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227	223	101.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.75	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			448.6	441	101.73	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			448.6	441	101.72	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.8	335	101.72	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.7	335	101.71	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.67	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.66	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	101.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.59	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.9	248	101.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	101.57	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.2	335	101.56	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.2	335	101.56	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.1	335	101.53	MRO-GVL Project Target
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	101.5	Elm Road/Oak Creek Outlet study
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	101.43	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			164.3	162	101.42	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447	441	101.36	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.1	229	101.35	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			446.9	441	101.35	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232	229	101.32	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			446.3	441	101.19	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.6	223	101.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.5	223	101.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.4	248	100.98	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.6	954	100.9	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.4	954	100.88	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.3	954	100.87	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.2	954	100.86	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.6	335	100.79	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.6	954	100.59	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.8	304	100.59	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			443.1	441	100.47	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			443	441	100.46	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.4	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.1	304	100.38	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.27	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			-	223	100.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			-	223	100.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.5	229	100.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.4	229	100.17	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			441.6	441	100.13	MRO-GVL Project Target

Table E3.2.2: Multiple Event Analysis “P3”, 2033 Summer Peak - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E3.3.1: Multiple Event Analysis “P3”, 2028 Shoulder - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.6	266	109.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243	223	108.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243	223	108.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.9	223	108.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.9	223	108.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.4	266	108.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.4	266	108.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.2	266	108.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.1	266	108.69	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			174.9	162	107.97	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			174.6	162	107.8	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.3	229	107.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.6	209	106.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.5	209	106.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.3	266	104.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.1	266	103.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.9	266	103.71	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency		Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1				275.7	266	103.65	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1				273.8	266	102.93	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1				273.8	266	102.91	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1				273.8	266	102.91	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1				273.7	266	102.9	N. Lake Geneva Area Limitation
698095 SUN 138	138	699963 JOHNSTOWN	138 1				-	321	101.26	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1				-	306	101.26	N. Lake Geneva Area Limitation

Table E3.3.2: Multiple Event Analysis “P3”, 2028 Shoulder - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

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Table E3.4.1: Multiple Event Analysis “P3”, 2028 Light Load - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.1	806	101.87	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			818.5	806	101.55	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.7	806	101.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.4	806	101.41	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.6	806	101.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.5	806	100.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.5	806	100.06	PLPL81/W30 Project and 230 kV study

Table E3.4.2: Multiple Event Analysis “P3”, 2028 Light Load - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E3.5.1: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			200.1	162	123.5	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			324.1	266	121.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.7	266	120.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.1	266	118.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.7	266	117.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.2	266	115.85	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			187.6	162	115.83	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			187.3	162	115.59	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			186.4	162	115.07	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			186.4	162	115.06	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			200	175	114.3	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.1	209	112.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.1	229	112.26	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.5	162	112.01	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.53	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.5	266	111.48	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			488.1	441	110.69	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			370.6	335	110.63	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			370.6	335	110.63	MRO-GVL Project Target
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	109.69	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	109.69	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.7	335	108.26	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			187.6	175	107.19	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			187.2	175	106.96	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.68	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.3	335	106.67	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.3	335	106.67	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			186.4	175	106.5	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			186.4	175	106.49	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			172.4	162	106.42	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.97	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.2	335	105.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.2	335	105.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.2	335	105.43	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.2	335	105.43	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.7	162	105.38	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.4	162	105.16	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.3	162	105.15	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loadin g	Comment
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.4	266	105.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.4	266	105.05	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1002.2	954	105.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.8	335	105.01	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.8	335	105.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.9	441	104.97	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			169.9	162	104.85	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.9	335	104.76	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.9	335	104.76	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462	441	104.76	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			169.2	162	104.43	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			460.4	441	104.4	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			460.4	441	104.4	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			349.1	335	104.21	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.4	223	104.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.19	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	104.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.15	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			181.7	175	103.81	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.6	223	103.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.6	223	103.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.5	223	103.37	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loadin g	Comment
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.5	223	103.35	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			656.4	639	102.73	Cypress area 345 kV uprate study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.7	229	102.48	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.44	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			342.7	335	102.3	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			342.3	335	102.17	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.4	335	101.93	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.5	335	101.93	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213	209	101.91	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.9	209	101.86	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.9	229	101.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.8	229	101.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.2	266	101.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	101.55	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340	335	101.5	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340	335	101.5	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			270	266	101.49	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340	335	101.49	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340	335	101.49	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.48	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.7	335	101.09	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.7	335	101.09	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			211.2	209	101.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.2	209	101.03	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.8	335	100.85	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.8	335	100.85	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.2	266	100.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.41	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			162.6	162	100.39	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			162.6	162	100.37	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.6	266	100.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.4	223	100.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.3	223	100.15	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			162	162	100.02	MRO-GVL Project Target

Table E3.5.2: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E4.1.1: Multiple Event Analysis “P6”, 2028 Summer Peak - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			592.8	335	176.96	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			592.8	335	176.96	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			592.4	335	176.85	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			592.4	335	176.85	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			571.7	335	170.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			571.7	335	170.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			571.3	335	170.53	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			571.3	335	170.53	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			270.3	162	166.86	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			270	162	166.69	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			269.5	162	166.35	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			269.3	162	166.21	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			266.8	162	164.7	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			266.6	162	164.55	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			251.4	162	155.16	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			251.3	162	155.14	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			270.7	175	154.66	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			270.4	175	154.5	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			270.1	175	154.34	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			269.9	175	154.21	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			267.3	175	152.76	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			267.1	175	152.63	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			246.9	162	152.43	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			672.2	441	152.42	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			246.9	162	152.42	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			671.7	441	152.32	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			666.6	441	151.17	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			666.2	441	151.06	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			251.8	175	143.88	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			251.8	175	143.87	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			318.2	223	142.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			318.1	223	142.66	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			247.3	175	141.34	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			247.3	175	141.33	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			320.5	229	139.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			288.3	209	137.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			288.3	209	137.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			303.5	223	136.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			303.5	223	136.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			300.8	223	134.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			300.8	223	134.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			305.9	229	133.57	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			216	162	133.34	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			216	162	133.33	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			295.9	223	132.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			295.9	223	132.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			303.2	229	132.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			273.2	209	130.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			298.3	229	130.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			270.6	209	129.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			286.8	223	128.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			286.7	223	128.59	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			565.1	441	128.14	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			565	441	128.13	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.1	223	127.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.1	223	127.83	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			265.8	209	127.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.2	223	126.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.2	223	126.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.1	229	126.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			287.4	229	125.51	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			418.4	335	124.9	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			418.4	335	124.9	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.5	229	124.25	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			413.7	335	123.49	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.3	223	123.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.3	223	123.47	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			216	175	123.45	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			216	175	123.44	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			257.1	209	123.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.4	223	122.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.4	223	122.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.4	209	122.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325	266	122.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.9	266	122.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.9	223	121.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271.8	223	121.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.4	223	121.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271.4	223	121.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.1	223	121.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271	223	121.54	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			196.6	162	121.34	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			322.7	266	121.3	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			322.6	266	121.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.7	229	121.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			270.4	223	121.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			270.4	223	121.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.4	266	121.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.4	266	121.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322	266	121.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322	266	121.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.9	223	121.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.9	223	121.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.9	223	121.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.9	223	121.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.9	223	121.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.9	223	121.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.5	209	120.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.3	223	120.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.3	223	120.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.9	223	120.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.9	223	120.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.8	229	120.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.5	223	120.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.5	223	120.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.4	223	120.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.4	223	120.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268	223	120.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.8	223	120.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.8	223	120.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.8	223	120.09	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.8	223	120.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.5	223	119.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.5	223	119.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.5	223	119.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.5	223	119.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274.2	229	119.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267	223	119.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267	223	119.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267	223	119.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.9	223	119.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.7	223	119.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.7	223	119.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			273.8	229	119.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.6	223	119.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.6	223	119.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.4	223	119.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.7	266	119.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.3	223	119.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.3	223	119.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.3	223	119.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.3	223	119.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.3	223	119.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			273.4	229	119.39	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			526	441	119.28	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.9	223	119.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.19	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			525.6	441	119.19	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.7	229	119.1	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			398.7	335	119.02	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			398.7	335	119.02	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.3	229	118.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.3	229	118.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.7	229	118.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293.9	248	118.49	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293.8	248	118.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293.8	248	118.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293.8	248	118.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.3	229	118.46	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			396.8	335	118.46	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			396.8	335	118.46	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264	223	118.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.9	223	118.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.9	223	118.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.9	223	118.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.8	229	118.26	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			191.6	162	118.25	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.8	229	118.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.3	229	118.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.2	229	117.97	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.2	229	117.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.6	266	117.89	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.8	229	117.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.3	266	117.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			292	248	117.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			292	248	117.73	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.3	335	117.7	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			394.3	335	117.7	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.3	229	117.61	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.3	229	117.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269	229	117.48	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.5	209	117.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.9	229	117.44	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			393.2	335	117.37	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			393.2	335	117.37	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.6	229	117.31	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.6	229	117.31	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			392.6	335	117.19	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.3	229	117.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			290.4	248	117.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			290.4	248	117.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			290.4	248	117.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			290.4	248	117.08	N. Lake Geneva Area Limitation
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			589.6	504	116.98	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			589.6	504	116.98	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			311	266	116.93	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			515.6	441	116.92	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			589.2	504	116.91	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			589.2	504	116.91	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.5	209	116.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.5	266	116.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			288.5	248	116.34	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			288.5	248	116.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			266.3	229	116.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.9	266	116.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.7	223	116.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.7	223	116.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.7	223	116.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.7	223	116.01	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			388.6	335	116	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			388.6	335	116	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			308.1	266	115.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.1	209	115.82	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			387.5	335	115.68	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			387.5	335	115.68	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			241.4	209	115.52	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			386.8	335	115.46	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			386.8	335	115.46	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			307	266	115.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.9	266	115.39	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			386.3	335	115.33	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			386.3	335	115.33	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			241	209	115.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.5	266	115.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.3	266	115.16	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			240.4	209	115.03	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			186.3	162	115.01	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.4	223	114.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.4	223	114.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.3	223	114.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.8	266	114.95	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			385.1	335	114.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			385.1	335	114.95	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.3	223	114.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.2	223	114.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.2	223	114.89	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.1	209	114.89	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.1	209	114.89	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.9	209	114.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256	223	114.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256	223	114.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305	266	114.67	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			185.7	162	114.64	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			239.5	209	114.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.5	223	114.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.4	223	114.55	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			505.1	441	114.53	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			304.5	266	114.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.5	266	114.46	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			383.2	335	114.38	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			383.2	335	114.38	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			304.2	266	114.38	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			383.1	335	114.37	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255	223	114.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255	223	114.35	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239	209	114.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304	266	114.28	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			503.9	441	114.25	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.5	209	114.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.5	209	114.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.4	266	114.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.4	266	114.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.02	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			381.9	335	114.01	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			381.9	335	114.01	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			261.1	229	114	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238	209	113.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.8	266	113.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.8	266	113.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.9	209	113.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.8	209	113.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.7	209	113.74	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.7	209	113.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.73	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			380.3	335	113.53	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			380.3	335	113.53	MRO-GVL Project Target

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			302	266	113.52	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302	266	113.52	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			237.2	209	113.49	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			237.2	209	113.49	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.8	266	113.48	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.8	266	113.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			253	223	113.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			253	223	113.43	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			237	209	113.42	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			237	209	113.4	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.5	266	113.34	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.8	209	113.29	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.7	209	113.24	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.6	209	113.22	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.1	266	113.21	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.6	209	113.19	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138 1			379	335	113.14	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			379	335	113.14	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138 1			300.9	266	113.13	N. Lake Geneva Area Limitation
699089 JAN 138	138	699141 TOWNLINE	138 1			236.4	209	113.12	N. Lake Geneva Area Limitation
699089 JAN 138	138	699141 TOWNLINE	138 1			236.4	209	113.12	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138 1			378.9	335	113.11	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			378.9	335	113.11	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			378.9	335	113.11	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			378.9	335	113.11	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138 1			300.9	266	113.11	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.4	209	113.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			300.8	266	113.09	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			300.8	266	113.09	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.2	223	113.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.1	223	113.07	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.7	335	113.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.7	335	113.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113.03	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113.03	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113.01	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113.01	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.01	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.6	335	113	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.7	229	112.98	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.4	335	112.97	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.4	335	112.97	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			236.1	209	112.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.6	229	112.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.4	266	112.91	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.2	335	112.89	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.2	335	112.89	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300.2	266	112.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.2	266	112.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.3	229	112.8	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.69	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.69	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.69	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.69	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			377.5	335	112.67	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			377.5	335	112.67	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			377.4	335	112.65	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			377.4	335	112.65	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.3	335	112.63	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.3	335	112.63	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.8	229	112.58	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.1	335	112.58	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.1	335	112.58	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.58	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			377.1	335	112.57	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			377.1	335	112.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377	335	112.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377	335	112.54	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			299.4	266	112.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.53	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			196.8	175	112.44	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.4	229	112.39	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			376.5	335	112.38	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			376.5	335	112.38	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.37	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			196.6	175	112.33	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.5	223	112.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.5	223	112.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.6	266	112.27	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.3	223	112.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.6	266	112.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.1	229	112.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.3	223	112.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.6	266	112.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.5	266	112.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.3	266	112.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.3	209	112.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.2	209	112.06	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			375.3	335	112.02	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375.3	335	112.02	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375.2	335	112	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375.2	335	112	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.9	266	111.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.9	266	111.98	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			375.1	335	111.97	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375	335	111.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375	335	111.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375	335	111.94	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			375	335	111.94	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.7	266	111.94	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.9	335	111.91	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.9	335	111.91	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.6	266	111.89	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.8	335	111.88	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.8	335	111.88	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.5	335	111.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.5	335	111.81	MRO-GVL Project Target

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			297.2	266	111.72	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138 1			374.1	335	111.67	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			374	335	111.66	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			374	335	111.66	MRO-GVL Project Target
699410 PARIS WE	138	699982 RAYMOND	138 1			374	335	111.65	mitigation available
699410 PARIS WE	138	699982 RAYMOND	138 1			374	335	111.64	mitigation available
699331 GRANVL 4	138	699492 TOSA-W	138 1			374	335	111.63	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.8	335	111.59	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.8	335	111.59	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.8	335	111.59	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.8	335	111.59	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138 1			296.8	266	111.58	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			296.7	266	111.53	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.6	335	111.52	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			373.6	335	111.52	MRO-GVL Project Target
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			255.3	229	111.49	N. Lake Geneva Area Limitation
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			373.1	335	111.36	MRO-GVL Project Target
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			373.1	335	111.36	MRO-GVL Project Target
693647 BERRYVILLE	138	699409 PARIS B5	138 1			447.6	402	111.35	mitigation available
693647 BERRYVILLE	138	699409 PARIS B5	138 1			447.6	402	111.34	mitigation available
699268 BUTLER	138	699327 GRANVL 5	138 1			490.9	441	111.33	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			372.8	335	111.3	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			372.8	335	111.3	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			372.6	335	111.21	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			372.6	335	111.21	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138 1			295.7	266	111.16	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			254.5	229	111.14	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.4	266	111.05	N. Lake Geneva Area Limitation
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			372	335	111.05	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			372	335	111.05	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			489.6	441	111.03	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			489.5	441	110.99	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			295.2	266	110.97	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			489.1	441	110.92	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			489.1	441	110.91	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			294.7	266	110.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.7	266	110.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.4	266	110.66	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			487.9	441	110.63	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			294.3	266	110.63	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			179.2	162	110.61	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.4	223	110.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.9	266	110.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.4	223	110.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.9	266	110.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.8	229	110.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.7	229	110.34	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			369.1	335	110.17	mitigation available
698865 BLUMND6 138 699268 BUTLER 138 2			178.5	162	110.17	MRO-GVL Project Target
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			369	335	110.16	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.1	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			485.3	441	110.05	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178.2	162	110.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			484.9	441	109.95	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245	223	109.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245	223	109.87	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			177.8	162	109.75	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			177.7	162	109.72	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			229.2	209	109.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.2	209	109.67	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			367.2	335	109.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			367.2	335	109.6	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			483.2	441	109.57	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			483.2	441	109.56	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			291.4	266	109.55	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			177.4	162	109.49	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			366.7	335	109.47	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			191.6	175	109.47	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			365.8	335	109.19	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			481.5	441	109.18	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.4	223	109.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.3	223	109.12	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			365.6	335	109.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			365.6	335	109.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			365.2	335	109	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			365.2	335	109	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			480.6	441	108.97	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.88	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			176.4	162	108.88	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.87	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			479.8	441	108.81	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			479.7	441	108.78	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			176.2	162	108.76	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			269.7	248	108.74	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			269.7	248	108.74	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.2	209	108.71	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			479.2	441	108.66	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.8	229	108.64	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			479	441	108.63	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			478.9	441	108.6	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			478.8	441	108.58	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			226.9	209	108.56	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			478.6	441	108.54	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			226.9	209	108.54	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			363.3	335	108.46	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			363.3	335	108.46	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			268.9	248	108.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268.8	248	108.4	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			477.8	441	108.34	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			226.4	209	108.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.4	223	108.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.4	223	108.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.2	209	108.21	N. Lake Geneva Area Limitation
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1092.9	1010	108.2	PLPL81/W30 Project and 230 kV study
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1092.8	1010	108.2	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.3	223	108.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.2	223	108.18	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.2	335	108.12	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.2	335	108.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			362	335	108.05	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.4	229	108.02	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			361.8	335	108.01	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			361.8	335	108.01	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.8	335	108	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.8	335	108	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			225.7	209	107.97	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			476.1	441	107.95	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			174.9	162	107.94	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.7	223	107.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.6	223	107.91	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.91	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.91	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			475.7	441	107.86	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.1	335	107.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.1	335	107.81	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			174.7	162	107.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361	335	107.77	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361	335	107.77	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			225.2	209	107.76	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.9	335	107.72	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.9	335	107.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			286.5	266	107.71	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			475	441	107.71	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			474.9	441	107.68	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			286.4	266	107.67	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			474.8	441	107.66	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			360.7	335	107.66	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			360.7	335	107.66	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			224.9	209	107.62	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.4	335	107.58	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.4	335	107.58	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.3	335	107.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.3	335	107.54	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			474.1	441	107.51	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			474	441	107.49	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			174.1	162	107.45	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.8	335	107.41	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.8	335	107.41	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			285.7	266	107.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.7	229	107.29	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			173.7	162	107.24	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			359.2	335	107.22	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			359.2	335	107.22	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			173.7	162	107.21	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239	223	107.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239	223	107.15	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			358.8	335	107.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.07	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			173.4	162	107.07	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.1	229	107.05	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.4	335	107	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.4	335	107	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.96	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.3	335	106.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.3	335	106.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.3	335	106.94	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.3	335	106.94	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			173.2	162	106.94	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			173.2	162	106.94	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			173.2	162	106.92	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.4	223	106.91	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.1	248	106.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.4	223	106.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.1	248	106.89	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			173.1	162	106.85	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			284.2	266	106.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.1	266	106.82	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.8	335	106.82	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.8	335	106.82	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			284.1	266	106.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.2	209	106.78	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.7	335	106.77	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.7	335	106.77	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.73	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.9	147	106.73	mitigation available
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.9	147	106.73	mitigation available
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.5	335	106.71	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.5	335	106.71	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.9	223	106.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.9	223	106.69	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.4	335	106.69	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.4	335	106.69	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.7	266	106.66	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.3	335	106.66	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.3	335	106.66	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.2	335	106.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.2	335	106.64	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			357.2	335	106.62	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.61	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.61	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.59	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			357.1	335	106.59	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			172.7	162	106.59	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.4	266	106.56	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			357	335	106.55	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			357	335	106.55	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356.8	335	106.51	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356.8	335	106.51	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.48	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			186.3	175	106.48	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.7	335	106.47	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.7	335	106.47	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.46	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.7	229	106.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.6	229	106.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.3	209	106.36	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			356.1	335	106.29	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			282.5	266	106.22	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.8	335	106.21	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.8	335	106.21	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			263.4	248	106.19	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.3	248	106.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.4	266	106.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.14	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			355.5	335	106.13	mitigation available
698864 BLUMND5 138 699268 BUTLER 138 1			185.7	175	106.13	MRO-GVL Project Target
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			355.5	335	106.12	mitigation available
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.5	335	106.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.5	335	106.12	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243	229	106.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.1	248	106.08	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			171.8	162	106.06	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.3	335	106.05	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			355.3	335	106.05	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			263	248	106.04	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263	248	106.03	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			355.2	335	106.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			467.4	441	105.99	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			355	335	105.97	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			355	335	105.97	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			171.6	162	105.94	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.9	223	105.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.9	223	105.79	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			354.3	335	105.77	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			354.3	335	105.77	MRO-GVL Project Target
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			697	659	105.76	mitigation available
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			697	659	105.76	mitigation available
699331 GRANVL 4 138 699492 TOSA-W 138 1			354.1	335	105.72	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			262.1	248	105.7	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.1	248	105.69	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			354	335	105.68	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			354	335	105.68	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			354	335	105.67	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			354	335	105.67	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.65	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.9	335	105.65	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			220.8	209	105.63	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.8	335	105.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.8	335	105.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.7	335	105.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.7	335	105.6	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			280.9	266	105.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.6	209	105.57	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.6	335	105.56	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.6	335	105.56	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.6	335	105.56	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.6	335	105.56	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.7	229	105.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.8	266	105.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.3	223	105.51	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			280.7	266	105.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.3	223	105.5	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			353.3	335	105.48	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			424	402	105.48	mitigation available
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.3	335	105.48	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.3	335	105.48	MRO-GVL Project Target
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			424	402	105.47	mitigation available
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.1	335	105.4	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.1	335	105.4	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.1	335	105.39	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.1	335	105.39	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.3	229	105.38	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353	335	105.36	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			464.5	441	105.33	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			261.2	248	105.31	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.2	248	105.31	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			464.4	441	105.31	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.8	335	105.31	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.8	335	105.31	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.8	335	105.31	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			352.7	335	105.29	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.7	223	105.26	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			352.6	335	105.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.7	223	105.25	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.6	335	105.24	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.6	335	105.24	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.4	335	105.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.4	335	105.19	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.8	441	105.17	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463.8	441	105.16	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.7	229	105.13	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.2	335	105.13	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			352.2	335	105.13	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.3	223	105.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.06	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463.3	441	105.06	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.3	223	105.05	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463.2	441	105.04	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279.4	266	105.04	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463.1	441	105	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	104.99	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463	441	104.99	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463	441	104.99	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			463	441	104.98	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.9	441	104.97	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351.6	335	104.95	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351.6	335	104.95	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.3	229	104.92	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			462.6	441	104.9	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351.3	335	104.86	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351.3	335	104.86	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			260	248	104.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.7	223	104.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.81	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			351.1	335	104.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.7	223	104.8	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			462.2	441	104.8	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351	335	104.78	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351	335	104.78	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462	441	104.77	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351	335	104.77	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			351	335	104.77	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.6	223	104.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.6	223	104.74	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			461.7	441	104.69	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.7	335	104.69	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			461.6	441	104.68	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			278.4	266	104.66	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.62	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.4	335	104.6	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.3	335	104.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.3	335	104.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			349.6	335	104.37	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			349.6	335	104.37	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			460.1	441	104.33	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			277.5	266	104.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.13	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			459.2	441	104.13	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			459.1	441	104.11	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			459	441	104.08	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.3	229	104.05	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			458.7	441	104.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			458.6	441	104	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			348.4	335	103.99	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			348.4	335	103.99	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.8	223	103.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.8	223	103.93	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.8	335	103.82	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			457.7	441	103.78	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.6	229	103.77	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			347.5	335	103.74	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			457.5	441	103.73	MRO-GVL Project Target
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			216.6	209	103.64	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			216.6	209	103.64	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.2	335	103.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.2	335	103.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347.1	335	103.61	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231	223	103.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231	223	103.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.1	229	103.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.3	209	103.51	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			456.5	441	103.51	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			216.3	209	103.49	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			456.3	441	103.47	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.6	335	103.47	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.6	223	103.42	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.4	335	103.42	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.6	223	103.41	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			455.8	441	103.36	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.6	229	103.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.4	223	103.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.4	223	103.31	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			455.6	441	103.3	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346	335	103.29	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.3	162	103.29	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			256.1	248	103.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.27	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			346	335	103.27	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			455.4	441	103.25	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.8	335	103.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.8	335	103.22	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			274.5	266	103.19	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			455	441	103.17	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			345.6	335	103.17	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			215.5	209	103.13	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.4	335	103.11	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.1	229	103.08	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.9	229	103.02	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			345	335	102.99	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			255.3	248	102.96	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.3	248	102.95	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.9	335	102.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.9	335	102.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.9	335	102.95	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.9	335	102.95	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.5	223	102.9	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			344.7	335	102.9	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.4	223	102.89	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			166.7	162	102.89	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			453.7	441	102.88	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			453.5	441	102.84	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.74	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.74	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.74	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.74	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			273	266	102.64	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.4	248	102.57	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.6	335	102.57	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			254.4	248	102.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.3	248	102.55	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			141.5	138	102.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.2	248	102.51	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.2	248	102.5	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.3	335	102.48	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166	162	102.48	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			179.2	175	102.41	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.9	162	102.4	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			253.9	248	102.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.39	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			165.8	162	102.36	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			451.4	441	102.35	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.8	162	102.35	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			253.8	248	102.32	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698080 BCH 69 69.0 699070 BCH 138 138 1			141.2	138	102.31	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			382.6	374	102.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228	223	102.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228	223	102.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.1	229	102.24	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.8	304	102.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.5	248	102.23	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.8	304	102.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.5	248	102.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.6	209	102.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.6	209	102.2	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.2	248	102.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.7	223	102.12	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.2	248	102.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.7	223	102.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.6	223	102.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.6	223	102.07	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			449.9	441	102.02	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			178.5	175	101.98	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			449.6	441	101.96	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			252.8	248	101.94	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.7	138	101.94	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			449.5	441	101.93	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			252.8	248	101.92	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			449.5	441	101.92	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.3	223	101.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.3	229	101.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.9	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			178.3	175	101.89	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1			178.3	175	101.88	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			178.3	175	101.88	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			252.6	248	101.84	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.6	248	101.84	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.2	335	101.84	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.2	335	101.84	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			252.5	248	101.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.8	209	101.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.8	209	101.83	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.4	248	101.77	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.9	335	101.77	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.9	335	101.77	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			252.4	248	101.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233	229	101.73	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			448.6	441	101.73	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			164.8	162	101.72	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			164.8	162	101.72	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.8	223	101.71	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.4	138	101.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.8	223	101.7	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.2	248	101.69	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309	304	101.66	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			448.3	441	101.65	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.5	335	101.65	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.5	335	101.65	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309	304	101.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.7	229	101.64	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			448.2	441	101.64	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.6	223	101.62	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			164.6	162	101.62	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.6	223	101.61	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252	248	101.61	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			164.6	162	101.61	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252	248	101.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.5	223	101.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.5	223	101.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.5	223	101.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.5	223	101.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.5	223	101.56	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.56	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.56	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			251.8	248	101.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.5	223	101.55	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			447.8	441	101.55	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.4	223	101.54	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			177.7	175	101.54	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.4	223	101.53	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.8	248	101.52	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			177.6	175	101.51	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.3	223	101.47	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			447.5	441	101.47	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447.5	441	101.47	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447.4	441	101.46	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.9	335	101.45	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.9	335	101.45	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447.3	441	101.44	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.5	248	101.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.1	223	101.41	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.37	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.37	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447	441	101.35	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			251.3	248	101.33	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			446.9	441	101.33	MRO-GVL Project Target
698082 WIB 138 138 699070 BCH 138 138 1			227.9	225	101.3	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			227.9	225	101.29	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			446.7	441	101.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.1	335	101.22	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.1	335	101.22	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			251	248	101.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251	248	101.21	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			446.3	441	101.2	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.3	441	101.2	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.3	441	101.2	MRO-GVL Project Target
698080 BCH 69 69.0 699070 BCH 138 138 1			139.7	138	101.2	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339	335	101.18	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339	335	101.18	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.6	223	101.16	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			211.4	209	101.16	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			163.8	162	101.14	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			211.4	209	101.13	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.4	304	101.11	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.4	304	101.11	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			338.7	335	101.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.7	248	101.09	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			445.8	441	101.09	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.8	441	101.09	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.7	441	101.07	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.7	441	101.06	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.5	335	101.06	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.5	335	101.06	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			268.8	266	101.05	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			445.6	441	101.05	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			211.2	209	101.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.7	266	101.02	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			445.5	441	101.01	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309	306	100.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.2	248	100.89	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.2	248	100.88	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			444.8	441	100.87	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			444.8	441	100.87	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163.4	162	100.87	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			250.1	248	100.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.83	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.9	954	100.82	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.9	954	100.82	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163.3	162	100.82	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			176.4	175	100.79	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			444.5	441	100.78	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			444.4	441	100.77	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			306.3	304	100.75	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961	954	100.74	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961	954	100.74	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			306.2	304	100.73	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			163.1	162	100.71	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			444	441	100.68	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163.1	162	100.68	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			176.2	175	100.68	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643.3	639	100.67	Cypress Area 345 kV Uprate study
698865 BLUMND6 138 699268 BUTLER 138 2			163.1	162	100.67	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			443.8	441	100.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.1	335	100.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.1	335	100.64	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643	639	100.63	Cypress Area 345 kV Uprate study
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.1	335	100.63	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.1	335	100.63	MRO-GVL Project Target
699047 ROR 138 138 699141 TOWNLINE 138 2			598.7	595	100.62	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			598.6	595	100.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.5	248	100.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.4	229	100.6	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			443.7	441	100.6	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337	335	100.59	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337	335	100.59	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.58	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.4	248	100.57	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.9	335	100.57	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.9	335	100.57	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			249.3	248	100.53	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			443.3	441	100.53	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			249.3	248	100.52	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.6	304	100.52	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.6	304	100.52	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			443.2	441	100.5	MRO-GVL Project Target
694105 ROR BUS3 138 699141 TOWNLINE 138 1			597.9	595	100.49	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			443	441	100.45	MRO-GVL Project Target
694105 ROR BUS3 138 699141 TOWNLINE 138 1			597.6	595	100.44	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			336.5	335	100.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230	229	100.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.43	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			226	225	100.43	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			442.9	441	100.42	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			442.8	441	100.41	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			442.8	441	100.41	MRO-GVL Project Target
698082 WIB 138 138 699070 BCH 138 138 1			225.9	225	100.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.9	223	100.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.8	209	100.39	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			162.6	162	100.38	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			442.6	441	100.36	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.2	335	100.35	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.2	335	100.35	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			248.8	248	100.32	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			162.5	162	100.31	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.6	229	100.26	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			441.9	441	100.21	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.9	441	100.2	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.9	441	100.2	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.9	441	100.2	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.9	441	100.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			335.6	335	100.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			335.6	335	100.19	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			175.3	175	100.19	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			248.5	248	100.18	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			441.8	441	100.18	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			335.6	335	100.18	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			335.6	335	100.18	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			175.3	175	100.18	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.6	441	100.14	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.6	441	100.13	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			306.3	306	100.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.1	229	100.06	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			441.2	441	100.05	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.2	441	100.05	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.2	441	100.05	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			162.1	162	100.04	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.1	441	100.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			441.1	441	100.02	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			266	266	100.01	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			954	954	100	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			954	954	100	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			954	954	100	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			954	954	100	MRO-GVL Project Target

Table E4.1.2: Multiple Event Analysis “P6”, 2028 Summer Peak – Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
693421	STATE LINE	138			0.8236	mitigation available
698518	SPRG VAL	138			0.8237	mitigation available
693421	STATE LINE	138			0.8244	mitigation available
698518	SPRG VAL	138			0.8245	mitigation available
693710	BALSAM 138	138			0.834	mitigation available
693710	BALSAM 138	138			0.8348	mitigation available
699346	KENOSHA6	138			0.8757	mitigation available
699345	KENOSH45	138			0.8758	mitigation available
699346	KENOSHA6	138			0.8758	mitigation available
699345	KENOSH45	138			0.8758	mitigation available
699362	LAKEVIEW	138			0.891	mitigation available
699362	LAKEVIEW	138			0.8911	mitigation available
693710	BALSAM 138	138			0.8982	mitigation available
693710	BALSAM 138	138			0.8982	mitigation available

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Table E4.2.1: Multiple Event Analysis “P6”, 2033 Summer Peak - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			604.2	335	180.37	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			604.2	335	180.37	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			603.8	335	180.24	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			603.8	335	180.24	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			583.1	335	174.07	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			583.1	335	174.07	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			582.7	335	173.94	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			582.7	335	173.94	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			277.3	162	171.16	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			277	162	170.96	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			275.9	162	170.3	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			275.6	162	170.13	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			273.2	162	168.64	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			272.9	162	168.46	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			277.6	175	158.63	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			277.3	175	158.44	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			276.4	175	157.96	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			276.2	175	157.8	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			273.6	175	156.37	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			273.4	175	156.21	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			684.9	441	155.3	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			684.3	441	155.17	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			679.3	441	154.03	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			678.7	441	153.9	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			332.9	223	149.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			332.8	223	149.26	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			237.2	162	146.44	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			237.2	162	146.43	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			335.2	229	146.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			302.7	209	144.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			302.7	209	144.84	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			232.8	162	143.7	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			232.8	162	143.7	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			316.5	223	141.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			316.5	223	141.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			313.8	223	140.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			313.8	223	140.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			318.9	229	139.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			308.9	223	138.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			308.9	223	138.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			316.2	229	138.09	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			221.9	162	137.01	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			222	162	137.01	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			286.1	209	136.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			311.3	229	135.92	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			237.6	175	135.78	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			237.6	175	135.78	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			283.4	209	135.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			299.2	223	134.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			299.2	223	134.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			297.5	223	133.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			297.5	223	133.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			278.6	209	133.29	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			233.1	175	133.23	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			233.2	175	133.23	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			295.1	223	132.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			295.1	223	132.33	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			301.6	229	131.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			299.9	229	130.94	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			576.8	441	130.8	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			576.8	441	130.8	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			346.2	266	130.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			346.1	266	130.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			289.9	223	130.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			289.9	223	130	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			297.5	229	129.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			343.9	266	129.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			343.8	266	129.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			269.4	209	128.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287.4	223	128.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287.4	223	128.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287	223	128.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287	223	128.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287	223	128.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287	223	128.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			341.8	266	128.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			340.9	266	128.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			340.9	266	128.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			267.7	209	128.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			340.2	266	127.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			340.2	266	127.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			292.3	229	127.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.6	223	127.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.5	223	127.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.5	223	127.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.5	223	127.58	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			339.3	266	127.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.9	223	127.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.9	223	127.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.4	223	127.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.4	223	127.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.4	223	127.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.3	223	127.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			265.3	209	126.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.9	223	126.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.8	223	126.84	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			221.9	175	126.81	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			221.9	175	126.8	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.6	223	126.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.5	223	126.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.4	223	126.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.4	223	126.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.8	229	126.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282	223	126.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282	223	126.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.4	229	126.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.8	223	126.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.7	223	126.34	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			423.3	335	126.34	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.5	223	126.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.5	223	126.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			335.8	266	126.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			335.8	266	126.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.4	223	126.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.4	223	126.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281	223	126	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281	223	125.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.9	223	125.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.9	223	125.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.9	223	125.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.9	223	125.96	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			203.9	162	125.88	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.5	223	125.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.5	223	125.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.1	223	125.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280	223	125.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280	223	125.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.9	223	125.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.9	229	125.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279	223	125.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.9	223	125.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.3	229	125.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.8	223	125	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.7	223	124.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.4	223	124.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.4	223	124.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.7	229	124.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			331.7	266	124.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.2	229	124.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.6	223	124.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.6	223	124.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.5	223	124.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.5	223	124.44	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.9	229	124.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.8	229	124.35	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			308.2	248	124.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			308.2	248	124.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			259.6	209	124.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.3	229	124.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.1	229	124.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.9	229	123.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.7	229	123.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.3	229	123.7	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.3	229	123.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.8	223	123.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			306.7	248	123.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.8	223	123.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.8	223	123.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.7	223	123.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			306.6	248	123.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.9	229	123.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.4	229	123.32	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			199.7	162	123.3	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.3	229	123.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.4	209	123.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.1	209	123.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.1	209	123.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327.1	266	122.99	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			304.8	248	122.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			304.8	248	122.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			304.7	248	122.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			304.8	248	122.88	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.3	229	122.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.1	229	122.75	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			540.7	441	122.61	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.8	229	122.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.1	266	122.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.3	223	122.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.3	223	122.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.9	266	122.51	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			540.3	441	122.51	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			325.5	266	122.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			303.2	248	122.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			303.2	248	122.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.9	229	122.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.9	229	122.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.6	266	122.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.6	266	122.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.7	209	121.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.7	209	121.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324	266	121.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.5	266	121.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.3	266	121.54	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			301.4	248	121.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254	209	121.51	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			301.3	248	121.5	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			278.1	229	121.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.9	266	121.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.6	209	121.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.5	209	121.31	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			322.5	266	121.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.2	266	121.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.1	266	121.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.7	209	120.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.6	266	120.88	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			410.8	340	120.83	230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			321.3	266	120.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.4	209	120.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.3	209	120.73	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			532.4	441	120.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			321	266	120.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321	266	120.66	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			531.9	441	120.61	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			320.6	266	120.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.8	209	120.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.4	266	120.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.4	266	120.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.7	229	120.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.6	209	120.37	N. Lake Geneva Area Limitation
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			606.6	504	120.36	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			606.6	504	120.36	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			970.1	806	120.36	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			970.1	806	120.36	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			320.1	266	120.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320	266	120.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320	266	120.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.4	209	120.29	N. Lake Geneva Area Limitation
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			606.2	504	120.28	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			606.2	504	120.28	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			251.3	209	120.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.1	223	120.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268	223	120.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.7	266	120.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.2	209	120.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.6	266	120.16	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.1	209	120.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.9	223	120.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.13	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			194.5	162	120.07	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			402.2	335	120.06	MRO-GVL Project Target
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			403.4	336	120.05	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			403.4	336	120.05	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			403.4	336	120.05	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			403.4	336	120.05	230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			250.8	209	119.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.9	266	119.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.8	266	119.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.7	266	119.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250.4	209	119.79	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			318.6	266	119.78	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.6	266	119.76	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.5	266	119.72	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.3	266	119.68	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.3	266	119.67	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.2	266	119.61	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			249.9	209	119.57	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318	266	119.53	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			249.8	209	119.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			317.7	266	119.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			317.5	266	119.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			317.5	266	119.36	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			317.1	266	119.2	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138 1			399.3	335	119.19	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138 1			399.3	335	119.19	MRO-GVL Project Target
698865 BLUMND6	138	699268 BUTLER	138 2			193	162	119.16	MRO-GVL Project Target
698879 SGR CK4	138	699360 NLK GV T	138 1			248.8	209	119.06	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.5	266	119	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.5	266	118.99	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			248.6	209	118.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			265.1	223	118.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			265.1	223	118.88	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.2	266	118.86	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.1	266	118.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.1	266	118.82	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			248.3	209	118.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.8	266	118.72	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.4	266	118.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			264.3	223	118.51	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.3	223	118.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.5	209	118.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.9	266	118.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.9	266	118.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.4	209	118.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.8	266	118.34	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			521.4	441	118.23	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			246.9	209	118.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.4	229	118.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.1	266	118.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.9	266	118.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.3	229	118.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263	223	117.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263	223	117.92	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			395	335	117.92	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			313.7	266	117.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.6	266	117.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.5	266	117.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.2	209	117.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.1	209	117.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.74	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			518.4	441	117.56	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262	223	117.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262	223	117.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.9	223	117.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.9	223	117.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.4	266	117.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.2	266	117.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312	266	117.3	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			311.5	266	117.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.5	229	116.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.8	209	116.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.7	209	116.62	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			204.1	175	116.62	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			260	223	116.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.9	223	116.57	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			203.9	175	116.49	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			266.6	229	116.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.5	223	116.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.5	223	116.35	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			388.3	335	115.91	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.3	229	115.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.9	223	115.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.9	223	115.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.4	229	115.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.2	229	115.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.3	223	115.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.3	223	115.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.8	266	115.33	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			462.8	402	115.12	mitigation available
699331 GRANVL 4 138 699492 TOSA-W 138 1			385.3	335	115.02	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			385.3	335	115.02	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.3	229	114.54	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			754.7	659	114.52	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.4	223	114.51	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			754.6	659	114.51	mitigation available
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.3	223	114.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.2	223	114.42	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.1	223	114.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			261.8	229	114.34	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			383	335	114.34	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			383	335	114.34	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.8	223	114.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.8	223	114.27	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			382.7	335	114.24	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			382.7	335	114.24	MRO-GVL Project Target
698867 RACINE5 138 699481 ST RITA 138 1			270.6	237	114.18	Elm Road/Oak Creek Outlet study
698864 BLUMND5 138 699268 BUTLER 138 1			199.7	175	114.11	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.4	223	114.09	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			270.4	237	114.09	Elm Road/Oak Creek Outlet study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.4	223	114.08	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			382.1	335	114.06	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			238.4	209	114.05	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			382	335	114.02	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.1	223	113.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.1	223	113.96	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			381.5	335	113.88	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			381.5	335	113.87	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			237.9	209	113.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.9	209	113.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.4	266	113.7	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.3	229	113.65	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			184	162	113.58	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			184	162	113.56	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			500.4	441	113.48	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			500.4	441	113.47	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.46	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.9	335	113.42	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			259.6	229	113.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			281	248	113.32	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.6	335	113.31	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			379.6	335	113.31	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			280.9	248	113.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			280.7	248	113.2	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			280.7	248	113.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.9	223	112.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.9	223	112.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.8	223	112.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.8	223	112.91	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.2	335	112.9	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			378.2	335	112.9	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			377.8	335	112.78	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			377.8	335	112.78	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300	266	112.77	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.6	335	112.73	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.68	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			496.8	441	112.66	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.1	223	112.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.1	223	112.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.7	229	112.54	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			182.3	162	112.53	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.9	223	112.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.52	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.9	223	112.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.1	209	112.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.2	266	112.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.5	229	112.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299	266	112.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.2	229	112.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.4	223	112.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.4	223	112.29	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			495.1	441	112.26	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			495	441	112.25	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			375.8	335	112.18	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			494.6	441	112.15	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.8	229	112.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250	223	112.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250	223	112.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.2	209	112.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.5	229	112	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.3	162	111.91	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.86	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			374.5	335	111.79	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.5	335	111.79	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			374.5	335	111.79	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181.1	162	111.78	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181	162	111.76	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			277.1	248	111.73	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			277.1	248	111.71	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276.9	248	111.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.9	223	111.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276.8	248	111.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.9	223	111.62	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			373.9	335	111.6	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.7	223	111.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.6	223	111.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.41	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1062.9	954	111.41	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1062.9	954	111.41	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			232.8	209	111.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.7	209	111.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.3	223	111.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.3	223	111.34	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1062	954	111.32	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1062	954	111.32	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			372.9	335	111.31	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276	248	111.31	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.9	248	111.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.9	248	111.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.9	248	111.23	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
699268 BUTLER 138 699327 GRANVL 5 138 1			490.5	441	111.22	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1			194.5	175	111.12	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			232.1	209	111.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.6	223	111.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.6	223	111.03	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			371.9	335	111.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.2	229	111.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232	209	111.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.2	229	110.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.2	248	110.98	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			489.3	441	110.96	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			275.2	248	110.95	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			371.7	335	110.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			371.7	335	110.95	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			489.1	441	110.92	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			274.9	248	110.85	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			488.6	441	110.79	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			488.6	441	110.79	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			274.7	248	110.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.9	223	110.72	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
699268 BUTLER 138 699327 GRANVL 5 138 1			488.3	441	110.72	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.9	223	110.71	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			488.3	441	110.71	MRO-GVL Project Target
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.4	229	110.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.7	223	110.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.6	223	110.6	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			179.2	162	110.6	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.3	229	110.59	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			487.5	441	110.55	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			370.1	335	110.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.8	229	110.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.7	209	110.37	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			486.6	441	110.34	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			369.5	335	110.3	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			369.5	335	110.3	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			193	175	110.28	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			486.2	441	110.26	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			273.4	248	110.25	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			486.2	441	110.24	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			273.4	248	110.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.22	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.6	397	110.22	230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273.3	248	110.2	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.5	397	110.2	230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.3	229	110.19	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			178.5	162	110.19	MRO-GVL Project Target
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.4	397	110.19	230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			273.2	248	110.17	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.4	397	110.17	230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			178.5	162	110.16	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			369	335	110.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			369	335	110.14	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			368.5	335	110.01	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			485.1	441	110	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178.2	162	109.99	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.3	223	109.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.2	223	109.98	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			368.3	335	109.95	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			368.3	335	109.95	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			484.7	441	109.91	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178.1	162	109.91	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245	223	109.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245	223	109.86	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			178	162	109.86	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			178	162	109.85	MRO-GVL Project Target
699410 PARIS WE 138 699982 RAYMOND 138 1			368	335	109.84	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			367.9	335	109.83	mitigation available
699268 BUTLER 138 699327 GRANVL 5 138 1			484.2	441	109.8	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.3	229	109.72	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.9	441	109.72	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			229.3	209	109.71	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.7	441	109.69	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			229.3	209	109.69	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.5	441	109.64	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			177.6	162	109.62	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251	229	109.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.4	223	109.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.4	223	109.59	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.3	441	109.59	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			483.3	441	109.59	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			367.1	335	109.59	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.4	223	109.57	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.3	223	109.56	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.1	441	109.55	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			367	335	109.54	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			367	335	109.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			367	335	109.54	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.7	229	109.46	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			482.7	441	109.45	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			271.3	248	109.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			271.3	248	109.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.8	223	109.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.8	223	109.33	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			177.1	162	109.33	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.7	223	109.3	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			366.1	335	109.3	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			366.1	335	109.3	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.7	223	109.29	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			366.1	335	109.29	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			228.4	209	109.28	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			228.4	209	109.28	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			439.3	402	109.28	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.6	223	109.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.6	223	109.25	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			439.2	402	109.25	mitigation available
698865 BLUMND6 138 699268 BUTLER 138 2			176.9	162	109.22	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250	229	109.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.3	223	109.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.3	223	109.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.8	209	109	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243	223	108.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.9	266	108.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.8	266	108.96	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			258.2	237	108.94	Elm Road/Oak Creek Outlet study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.9	223	108.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.9	223	108.92	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			176.4	162	108.88	MRO-GVL Project Target
698867 RACINE5 138 699481 ST RITA 138 1			258	237	108.86	Elm Road/Oak Creek Outlet study
698879 SGR CK4 138 699360 NLK GV T 138 1			227.5	209	108.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.7	223	108.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.2	229	108.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.7	223	108.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.5	266	108.84	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1038.2	954	108.83	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1038.2	954	108.83	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1038.2	954	108.82	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1038.2	954	108.82	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			289.5	266	108.82	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			176.3	162	108.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			364.3	335	108.75	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			364.3	335	108.75	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			176.2	162	108.75	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249	229	108.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.4	223	108.69	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			364.1	335	108.69	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			364.1	335	108.69	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.4	223	108.68	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.8	335	108.61	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.8	335	108.61	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1035	954	108.49	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1035	954	108.49	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1034.9	954	108.48	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1034.9	954	108.48	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			288.5	266	108.45	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.1	335	108.4	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.1	335	108.4	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			363.1	335	108.38	MRO-GVL Project Target
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			363	335	108.36	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			363	335	108.35	mitigation available
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.9	335	108.33	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.7	335	108.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.7	335	108.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.5	335	108.21	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.5	335	108.21	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.5	335	108.2	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.5	335	108.2	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.4	335	108.19	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.4	335	108.19	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.2	335	108.11	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.2	335	108.11	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			268	248	108.05	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.9	248	108.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.3	229	108.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.7	209	108.01	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.8	335	108	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.8	335	108	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			225.7	209	107.99	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.5	335	107.92	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			287.1	266	107.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.5	248	107.88	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.4	335	107.87	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			361.4	335	107.87	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			286.9	266	107.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.5	248	107.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.4	209	107.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.3	209	107.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.7	266	107.78	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			361	335	107.76	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.7	229	107.75	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.8	397	107.75	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.8	397	107.75	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.6	397	107.72	230 kV study
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			360.8	335	107.71	MRO-GVL Project Target
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.6	397	107.71	230 kV study
698080 BCH 69 69.0 699070 BCH 138 138 1			148.6	138	107.7	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.7	335	107.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.7	335	107.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.7	335	107.67	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.7	335	107.67	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.65	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.65	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.64	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			266.9	248	107.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.9	209	107.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.1	266	107.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.2	229	107.5	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.1	335	107.48	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.1	335	107.48	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.1	335	107.48	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.1	229	107.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.6	223	107.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246	229	107.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.3	209	107.34	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.2	248	107.33	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.4	335	107.28	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.4	335	107.28	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.7	229	107.27	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.2	335	107.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.1	335	107.21	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.1	335	107.21	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			265.8	248	107.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.16	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.16	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359	335	107.16	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			472.6	441	107.16	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			265.7	248	107.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.7	248	107.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			472.5	441	107.15	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			265.7	248	107.12	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			358.8	335	107.11	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.3	229	107.1	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1021.7	954	107.09	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			472.2	441	107.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.7	335	107.07	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.7	335	107.07	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.7	335	107.07	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			284.8	266	107.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.8	266	107.05	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.6	335	107.04	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.6	335	107.04	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			472	441	107.04	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.1	229	107.02	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			472	441	107.02	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1020.7	954	106.99	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			358.4	335	106.98	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			358.4	335	106.98	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.97	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			471.7	441	106.97	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.3	335	106.97	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			284.5	266	106.96	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.2	248	106.94	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			471.6	441	106.94	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.93	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.93	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.6	441	106.93	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1020	954	106.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.92	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			358.2	335	106.92	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.5	441	106.92	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.91	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			471.4	441	106.89	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			471.3	441	106.87	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			223.3	209	106.86	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			471.2	441	106.85	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			223.3	209	106.85	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.9	335	106.84	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.9	335	106.84	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			264.9	248	106.81	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.7	335	106.78	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.7	335	106.78	MRO-GVL Project Target
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.9	147	106.77	mitigation available
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.9	147	106.77	mitigation available
699268 BUTLER 138 699327 GRANVL 5 138 1			470.8	441	106.76	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			470.8	441	106.76	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			264.6	248	106.68	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			470.5	441	106.68	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			264.5	248	106.67	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.3	335	106.67	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			357.3	335	106.67	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			470.3	441	106.64	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			470.3	441	106.64	MRO-GVL Project Target
698080 BCH 69 69.0 699070 BCH 138 138 1			147.1	138	106.63	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			264.4	248	106.62	N. Lake Geneva Area Limitation
698082 WIB 138	138	699070 BCH 138	138 1			239.9	225	106.62	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			264.4	248	106.61	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138 1			470.2	441	106.61	MRO-GVL Project Target
699268 BUTLER	138	699327 GRANVL 5	138 1			470.2	441	106.61	MRO-GVL Project Target
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			357.1	335	106.61	MRO-GVL Project Target
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			357.1	335	106.61	MRO-GVL Project Target
698082 WIB 138	138	699070 BCH 138	138 1			239.8	225	106.58	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			357	335	106.57	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			264.2	248	106.55	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			264.2	248	106.52	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			146.9	138	106.46	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			264	248	106.44	N. Lake Geneva Area Limitation
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			356.6	335	106.44	MRO-GVL Project Target
699268 BUTLER	138	699327 GRANVL 5	138 1			469.3	441	106.42	MRO-GVL Project Target
698090 BOL 138	138	699086 ELK 138	138 1			263.9	248	106.41	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			222.3	209	106.36	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.7	248	106.34	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138 1			468.7	441	106.29	MRO-GVL Project Target
698090 BOL 138	138	699086 ELK 138	138 1			263.6	248	106.28	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.5	248	106.27	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138 1			468.4	441	106.22	MRO-GVL Project Target
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			355.7	335	106.18	MRO-GVL Project Target
693544 MILWKE CTY T	138	699492 TOSA-W	138 1			355.7	335	106.18	MRO-GVL Project Target
698879 SGR CK4	138	699360 NLK GV T	138 1			221.8	209	106.14	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138 1			468	441	106.13	MRO-GVL Project Target
698879 SGR CK4	138	699360 NLK GV T	138 1			221.8	209	106.13	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.3	266	106.12	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138 1			467.7	441	106.05	MRO-GVL Project Target

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Monitored Element					First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER	138	699327 GRANVL 5	138	1			467.6	441	106.04	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138	1			282	266	106.03	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138	1			355.2	335	106.02	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138	1			355.2	335	106.02	MRO-GVL Project Target
699268 BUTLER	138	699327 GRANVL 5	138	1			467.6	441	106.02	MRO-GVL Project Target
698080 BCH 69	69.0	699070 BCH 138	138	1			146.3	138	106.02	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138	1			146.2	138	105.96	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138	1			467.1	441	105.91	MRO-GVL Project Target
698879 SGR CK4	138	699360 NLK GV T	138	1			221.3	209	105.91	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			221.2	209	105.84	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			262.4	248	105.79	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			262.3	248	105.78	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138	1			354.3	335	105.77	MRO-GVL Project Target
699331 GRANVL 4	138	699492 TOSA-W	138	1			354.2	335	105.72	MRO-GVL Project Target
698090 BOL 138	138	699086 ELK 138	138	1			262.2	248	105.71	N. Lake Geneva Area Limitation
699268 BUTLER	138	699327 GRANVL 5	138	1			466.1	441	105.69	MRO-GVL Project Target
698090 BOL 138	138	699086 ELK 138	138	1			262.1	248	105.68	N. Lake Geneva Area Limitation
693580 CYPRESS	345	699247 ARCADIAN 345	345	1			675.2	639	105.67	Cypress Area 345 kV Uprate study
693580 CYPRESS	345	699247 ARCADIAN 345	345	1			675.1	639	105.65	Cypress Area 345 kV Uprate study
698883 WHTWTR5	138	699516 BLUFFCRK	138	1			241.9	229	105.63	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138	1			353.8	335	105.61	MRO-GVL Project Target
699268 BUTLER	138	699327 GRANVL 5	138	1			465.8	441	105.61	MRO-GVL Project Target
699085 NLG 138	138	699086 ELK 138	138	1			280.9	266	105.59	N. Lake Geneva Area Limitation
699331 GRANVL 4	138	699492 TOSA-W	138	1			353.7	335	105.59	MRO-GVL Project Target
694124 GRANVILLE B2	345	699247 ARCADIAN 345	345	1			1007	954	105.56	MRO-GVL Project Target
698090 BOL 138	138	699086 ELK 138	138	1			261.8	248	105.55	N. Lake Geneva Area Limitation
698867 RACINE5	138	699481 ST RITA	138	1			250.1	237	105.54	Elm Road/Oak Creek Outlet study
699331 GRANVL 4	138	699492 TOSA-W	138	1			353.5	335	105.53	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			353.5	335	105.52	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.3	335	105.46	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.3	335	105.46	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			220.3	209	105.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.4	248	105.42	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			322.5	306	105.39	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1005.4	954	105.39	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1005.4	954	105.39	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1005.3	954	105.38	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1005.3	954	105.38	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			220.2	209	105.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.3	248	105.36	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.3	248	105.36	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.2	248	105.34	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1005	954	105.34	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			352.7	335	105.3	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280	266	105.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.9	248	105.19	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			463.8	441	105.17	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			352.3	335	105.16	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			847.4	806	105.13	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			260.7	248	105.12	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1002.7	954	105.11	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			183.9	175	105.1	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			183.9	175	105.1	MRO-GVL Project Target
698082 WIB 138 138 699070 BCH 138 138 1			236.4	225	105.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698082 WIB 138 138 699070 BCH 138 138 1			236.4	225	105.06	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			352	335	105.06	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.8	806	105.06	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			260.5	248	105.02	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.4	248	105.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.4	209	104.98	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.4	335	104.89	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1000.4	954	104.87	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.83	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			999.9	954	104.81	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			669.8	639	104.81	Cypress Area 345 kV Uprate study
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.1	335	104.79	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			669.5	639	104.77	Cypress Area 345 kV Uprate study
699268 BUTLER 138 699327 GRANVL 5 138 1			461.8	441	104.72	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			461.7	441	104.7	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			461.7	441	104.7	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.7	335	104.7	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			350.5	335	104.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			350.5	335	104.64	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			350.4	335	104.59	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			218.5	209	104.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.2	248	104.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.4	209	104.49	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			169.3	162	104.48	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			319.7	306	104.47	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			169.2	162	104.46	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			277.7	266	104.4	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			169.1	162	104.37	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			277.6	266	104.35	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.6	223	104.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.6	223	104.32	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			349.5	335	104.32	mitigation available
698082 WIB 138 138 699070 BCH 138 138 1			234.7	225	104.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.6	223	104.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.6	223	104.31	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			349.4	335	104.31	mitigation available
698865 BLUMND6 138 699268 BUTLER 138 2			169	162	104.3	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			169	162	104.3	MRO-GVL Project Target
698082 WIB 138 138 699070 BCH 138 138 1			234.7	225	104.29	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			234.6	225	104.28	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			234.6	225	104.27	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			168.9	162	104.26	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			168.9	162	104.26	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			217.8	209	104.19	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.3	248	104.17	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			318.7	306	104.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.1	248	104.07	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.1	175	104.07	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.9	223	104.01	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			168.5	162	104.01	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.9	223	104	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.2	806	103.99	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.92	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			348.1	335	103.91	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			348.1	335	103.91	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.7	223	103.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.7	223	103.89	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.4	806	103.89	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			217	209	103.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.78	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			388.1	374	103.77	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			168.1	162	103.77	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.4	223	103.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.4	223	103.75	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			347.5	335	103.74	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			411.8	397	103.73	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			411.8	397	103.73	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			411.8	397	103.73	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			411.8	397	103.73	230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			168	162	103.73	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.3	335	103.68	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.3	335	103.68	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.1	335	103.62	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.1	335	103.62	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.9	162	103.62	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.6	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.6	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.59	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			347	335	103.59	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.2	175	103.55	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.6	335	103.47	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.6	335	103.47	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.6	162	103.46	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181	175	103.45	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181	175	103.43	MRO-GVL Project Target
694106 ROR BUS1 138 699062 MRE 138 138 1			386.8	374	103.42	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.32	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.1	335	103.32	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.1	335	103.32	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			985.5	954	103.31	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.4	162	103.31	MRO-GVL Project Target
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			315.9	306	103.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.2	223	103.24	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			345.9	335	103.24	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			345.9	335	103.24	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.2	223	103.23	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.8	304	103.22	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.7	335	103.2	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.7	335	103.2	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.7	304	103.2	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			984.1	954	103.16	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			984	954	103.15	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			454.9	441	103.15	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			167.1	162	103.15	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.5	335	103.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.5	335	103.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.4	335	103.11	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.4	335	103.11	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.4	335	103.1	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.4	335	103.1	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			983.4	954	103.09	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.3	335	103.08	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			345.3	335	103.08	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.9	806	103.08	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.8	806	103.07	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.7	806	103.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.4	806	103.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.4	806	103.02	PLPL81/W30 Project and 230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			166.9	162	103.02	MRO-GVL Project Target
694106 ROR BUS1 138 699062 MRE 138 138 1			385.2	374	103.01	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.1	806	102.98	PLPL81/W30 Project and 230 kV study
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			345	335	102.98	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			345	335	102.98	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			215.2	209	102.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.8	266	102.92	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			829.5	806	102.92	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			215.1	209	102.91	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			829.4	806	102.91	PLPL81/W30 Project and 230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			166.7	162	102.91	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			981.3	954	102.86	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.86	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.5	335	102.83	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.5	335	102.83	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			344.5	335	102.82	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.4	335	102.81	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.4	335	102.81	MRO-GVL Project Target
698082 WIB 138 138 699070 BCH 138 138 1			231.3	225	102.8	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			231.3	225	102.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.8	209	102.76	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.75	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.75	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.75	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344.2	335	102.75	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			214.7	209	102.73	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			384.2	374	102.72	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828	806	102.72	PLPL81/W30 Project and 230 kV study
699331 GRANVL 4 138 699492 TOSA-W 138 1			344	335	102.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			344	335	102.68	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			827.6	806	102.68	PLPL81/W30 Project and 230 kV study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			312.1	304	102.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273	266	102.64	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			312	304	102.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235	229	102.61	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235	229	102.61	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			452.5	441	102.61	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			452.5	441	102.61	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			826.8	806	102.58	PLPL81/W30 Project and 230 kV study
699268 BUTLER 138 699327 GRANVL 5 138 1			452.3	441	102.55	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.5	335	102.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.5	335	102.54	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			214.3	209	102.52	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			412.1	402	102.51	mitigation available
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.2	335	102.46	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			343.2	335	102.46	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			343.2	335	102.44	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			343.2	335	102.44	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			214.1	209	102.42	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			141.3	138	102.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214	209	102.38	N. Lake Geneva Area Limitation
699391 OAC BUS81-82 138 699481 ST RITA 138 1			342.9	335	102.36	Elm Road/Oak Creek Outlet study
698864 BLUMND5 138 699268 BUTLER 138 1			179.1	175	102.32	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.3	229	102.31	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			165.7	162	102.31	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			975.7	954	102.27	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			342.6	335	102.26	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			342.6	335	102.26	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.25	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			382.4	374	102.24	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			975.4	954	102.24	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.8	304	102.23	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.8	304	102.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.1	229	102.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.6	209	102.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.7	266	102.16	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			974.5	954	102.14	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			974.4	954	102.14	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.5	209	102.14	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			342.1	335	102.11	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			342.1	335	102.11	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.4	162	102.11	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.7	223	102.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.8	229	102.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.6	223	102.08	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			312.3	306	102.07	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			229.6	225	102.07	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			342	335	102.07	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			973.6	954	102.05	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.9	335	102.05	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			973.4	954	102.04	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698082 WIB 138 138 699070 BCH 138 138 1			229.6	225	102.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.2	209	101.99	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.6	335	101.98	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.6	335	101.98	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.7	954	101.96	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.1	209	101.96	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			178.4	175	101.96	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.5	335	101.95	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.5	335	101.95	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			178.4	175	101.93	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.4	335	101.91	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.4	335	101.91	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.1	223	101.86	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.2	335	101.86	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.2	335	101.86	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.1	223	101.85	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			605.9	595	101.83	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			380.8	374	101.83	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.1	335	101.82	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.1	335	101.82	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.1	335	101.82	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341.1	335	101.82	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227	223	101.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227	223	101.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.7	209	101.79	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341	335	101.79	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341	335	101.79	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			178.1	175	101.77	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.9	335	101.76	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.9	335	101.76	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.7	954	101.75	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.1	806	101.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.1	806	101.75	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			178	175	101.72	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309.2	304	101.71	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			164.7	162	101.7	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309.2	304	101.7	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970	954	101.68	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.68	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			969.9	954	101.67	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			177.9	175	101.67	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309.1	304	101.66	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			309.1	304	101.66	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			604.8	595	101.65	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			177.9	175	101.65	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			969.7	954	101.64	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.2	806	101.63	PLPL81/W30 Project and 230 kV study
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.5	335	101.63	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.5	335	101.63	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			969	954	101.57	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			969	954	101.57	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.6	229	101.55	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.2	335	101.55	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			212.2	209	101.55	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.54	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.54	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.54	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			340.2	335	101.54	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			340.1	335	101.53	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447.7	441	101.52	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.3	223	101.49	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			968.2	954	101.48	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.48	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			447.5	441	101.47	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.9	954	101.45	MRO-GVL Project Target
698080 BCH 69 69.0 699070 BCH 138 138 1			140	138	101.45	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.7	954	101.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.8	335	101.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.8	335	101.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.8	335	101.43	MRO-GVL Project Target
694106 ROR BUS1 138 699062 MRE 138 138 1			379.3	374	101.42	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.5	954	101.41	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.4	954	101.41	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.3	806	101.4	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.3	806	101.4	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			177.4	175	101.39	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			251.4	248	101.37	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.1	954	101.37	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967.1	954	101.37	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			967	954	101.37	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			447	441	101.37	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			164.2	162	101.37	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.36	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.36	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.36	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.35	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.5	335	101.35	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.5	335	101.35	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.34	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.33	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.4	335	101.32	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.4	335	101.32	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.4	335	101.32	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			339.3	335	101.29	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.3	335	101.29	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.3	335	101.29	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.2	335	101.24	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.2	335	101.24	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.21	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			965.6	954	101.21	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			965.6	954	101.21	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			965.5	954	101.21	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			177.1	175	101.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339	335	101.18	MRO-GVL Project Target
694106 ROR BUS1 138 699062 MRE 138 138 1			378.4	374	101.17	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.9	954	101.15	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.8	335	101.14	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.8	335	101.14	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.8	335	101.14	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.13	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.6	138	101.13	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.5	138	101.1	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			176.9	175	101.08	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.2	954	101.07	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963.9	954	101.03	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963.8	954	101.03	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963.7	954	101.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.4	441	101.01	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963.2	954	100.96	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.2	335	100.96	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.2	335	100.96	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.2	335	100.95	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.2	335	100.95	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963	954	100.94	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.1	441	100.94	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.2	335	100.94	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.92	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.7	954	100.91	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.1	335	100.91	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962.6	954	100.9	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			337.9	335	100.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.87	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.9	335	100.86	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.9	335	100.86	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.9	335	100.86	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			250.1	248	100.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			962	954	100.84	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.9	954	100.83	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.9	954	100.83	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.7	954	100.81	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.7	335	100.81	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			644	639	100.79	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			644	639	100.79	Cypress Area 345 kV Uprate study
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.6	335	100.79	MRO-GVL Project Target
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			400.1	397	100.79	230 kV study
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.6	335	100.78	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.6	335	100.77	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.6	335	100.77	MRO-GVL Project Target
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			400	397	100.77	230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			176.3	175	100.76	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			249.9	248	100.75	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.1	954	100.75	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.4	335	100.73	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.4	335	100.73	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643.6	639	100.72	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643.6	639	100.72	Cypress Area 345 kV Uprate study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			960.8	954	100.72	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			960.9	954	100.72	MRO-GVL Project Target
699060 COR 138 138 699062 MRE 138 138 1			337.4	335	100.71	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			176.2	175	100.71	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.7	806	100.7	PLPL81/W30 Project and 230 kV study
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			960.6	954	100.69	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643.4	639	100.68	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			643.4	639	100.68	Cypress Area 345 kV Uprate study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.3	335	100.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.2	335	100.66	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.1	335	100.64	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337.1	335	100.64	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			960	954	100.63	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.9	304	100.63	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			642.9	639	100.62	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			642.9	639	100.62	Cypress Area 345 kV Uprate study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.9	304	100.62	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.8	954	100.61	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.9	954	100.61	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.6	954	100.59	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337	335	100.59	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			337	335	100.59	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.8	304	100.59	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.6	954	100.58	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.4	954	100.57	MRO-GVL Project Target
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.7	304	100.57	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.4	954	100.56	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.3	954	100.55	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.3	954	100.55	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.3	954	100.55	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.8	335	100.55	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.55	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.1	954	100.54	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			959.1	954	100.53	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			249.3	248	100.51	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.7	335	100.5	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.7	335	100.5	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			267.3	266	100.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.2	266	100.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230	229	100.45	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.5	335	100.44	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.5	335	100.44	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.3	335	100.4	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			336.3	335	100.4	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			808.7	806	100.33	PLPL81/W30 Project and 230 kV study
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.1	335	100.32	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			808.4	806	100.3	PLPL81/W30 Project and 230 kV study
699331 GRANVL 4 138 699492 TOSA-W 138 1			336	335	100.29	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			808.4	806	100.29	PLPL81/W30 Project and 230 kV study
699060 COR 138 138 699062 MRE 138 138 1			335.9	335	100.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.6	209	100.26	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			808	806	100.25	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			209.5	209	100.25	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			442	441	100.23	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			442	441	100.22	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.5	229	100.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.5	266	100.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.4	266	100.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.3	229	100.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.3	223	100.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.3	223	100.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.3	266	100.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.2	266	100.07	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.5	806	100.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.3	806	100.04	PLPL81/W30 Project and 230 kV study
699268 BUTLER 138 699327 GRANVL 5 138 1			441	441	100.01	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			266	266	100.01	N. Lake Geneva Area Limitation

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Table E4.2.2: Multiple Event Analysis “P6”, 2033 Summer Peak – Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
698518	SPRG VAL	138			0.8359	mitigation available
698518	SPRG VAL	138			0.8359	mitigation available
693421	STATE LINE	138			0.836	mitigation available
693421	STATE LINE	138			0.836	mitigation available
693710	BALSAM 138	138			0.8458	mitigation available
693710	BALSAM 138	138			0.8458	mitigation available
699346	KENOSHA6	138			0.8826	mitigation available
699345	KENOSH45	138			0.8826	mitigation available
699346	KENOSHA6	138			0.8826	mitigation available
699345	KENOSH45	138			0.8826	mitigation available
699227	HUBBARD_138	138			0.8833	LTC reverse flow mitigation
699227	HUBBARD_138	138			0.8833	LTC reverse flow mitigation
698933	HUSTISFD T2	138			0.8857	LTC reverse flow mitigation
698932	HUS TAP 2	138			0.8857	LTC reverse flow mitigation
698230	HUSTISFD T1	138			0.8857	LTC reverse flow mitigation
698933	HUSTISFD T2	138			0.8857	LTC reverse flow mitigation
698932	HUS TAP 2	138			0.8857	LTC reverse flow mitigation
698230	HUSTISFD T1	138			0.8857	LTC reverse flow mitigation
698931	HUS TAP 1	138			0.8858	LTC reverse flow mitigation
698931	HUS TAP 1	138			0.8858	LTC reverse flow mitigation
699477	RUBICON	138			0.8881	mitigation available
699477	RUBICON	138			0.8881	mitigation available
693710	BALSAM 138	138			0.8965	mitigation available
699362	LAKEVIEW	138			0.8977	mitigation available
699362	LAKEVIEW	138			0.8977	mitigation available
693710	BALSAM 138	138			0.8993	mitigation available

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Table E4.3.1: Multiple Event Analysis “P6”, 2028 Shoulder - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			242.2	162	149.54	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			242	162	149.38	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			496	335	148.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			496	335	148.05	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			495.6	335	147.94	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			495.6	335	147.94	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			236.1	162	145.74	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			235.9	162	145.61	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			234.4	162	144.69	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			234.2	162	144.56	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			482.8	335	144.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			482.8	335	144.12	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			482.5	335	144.02	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			482.5	335	144.02	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			242.5	175	138.55	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			242.2	175	138.41	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			236.4	175	135.11	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			236.2	175	134.99	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			234.7	175	134.11	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			234.5	175	133.99	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.7	223	128.11	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.7	223	128.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.7	223	128.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.6	223	128.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			266.4	209	127.48	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			266.4	209	127.47	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			559.9	441	126.96	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			559.5	441	126.86	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			556.4	441	126.18	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			556	441	126.08	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			288	229	125.77	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			202.5	162	125.02	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			202.5	162	125.01	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			199.8	162	123.31	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			199.7	162	123.3	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			198.1	162	122.31	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			198.1	162	122.29	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.2	223	119.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.1	223	119.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.5	223	118.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.4	223	118.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.7	209	118.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.5	229	117.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245	209	117.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.3	223	117.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.3	223	117.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			266.8	229	116.5	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			202.8	175	115.9	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			202.8	175	115.89	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			241.9	209	115.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			263.7	229	115.13	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			200	175	114.3	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			200	175	114.29	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.4	223	113.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.4	223	113.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253	223	113.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253	223	113.46	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			198	175	113.14	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			198	175	113.12	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			182.6	162	112.73	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			235.5	209	112.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257	229	112.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.2	209	112.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.9	209	111.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.3	266	111.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.7	229	111.67	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			899.1	806	111.55	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			899.1	806	111.55	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.4	229	111.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.9	266	110.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294	266	110.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.2	266	109.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.2	266	109.85	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			484	441	109.74	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			483.9	441	109.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			291.4	266	109.55	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.6	223	109.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.6	223	109.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.5	223	109.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.5	223	109.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.1	266	109.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.3	223	108.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.3	223	108.64	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			175.7	162	108.45	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	107.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	107.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	107.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	107.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	107.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	107.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.7	223	107.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.7	223	107.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.6	223	107.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.6	223	107.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.7	223	107.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.5	223	107.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.7	266	107.41	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.9	229	107.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.8	229	107.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.3	209	107.31	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.4	335	107.27	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.1	209	107.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224	209	107.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.9	223	107.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.9	223	107.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.5	223	106.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.5	223	106.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.5	223	106.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.5	223	106.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.5	223	106.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.5	223	106.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.4	223	106.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.4	223	106.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.6	229	106.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.1	223	106.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.1	223	106.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.1	223	106.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238	223	106.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.68	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			223	209	106.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.48	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			222.4	209	106.42	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			222.4	209	106.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237	223	106.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.9	223	106.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.6	266	106.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.6	266	106.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.8	223	106.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.8	223	106.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.9	209	106.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.9	209	106.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.8	209	106.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.8	209	106.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243	229	106.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.6	223	106.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.6	223	106.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.04	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.4	223	106	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.4	223	105.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.8	266	105.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.91	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.3	209	105.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.1	223	105.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.1	223	105.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.6	266	105.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236	223	105.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236	223	105.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.1	229	105.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.8	266	105.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.3	209	105.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.3	266	105.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.2	229	105.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.1	209	105.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.8	229	105.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.8	229	105.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.8	229	105.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.8	229	105.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.6	209	105.08	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.6	209	105.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.5	209	105.03	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			170.1	162	105.02	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	105.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.4	229	104.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	104.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.4	229	104.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.2	266	104.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.2	266	104.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.2	266	104.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.7	223	104.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.1	209	104.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.7	223	104.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.7	223	104.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.7	223	104.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219	209	104.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.64	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.3	229	104.5	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.2	229	104.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.8	266	104.42	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.6	175	104.36	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.9	229	104.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.5	266	104.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.5	266	104.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.6	248	104.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.6	248	104.27	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.5	175	104.26	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			277.2	266	104.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.6	209	104.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.4	229	104.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.4	229	104.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.5	209	104.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.2	209	103.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.2	209	103.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.2	209	103.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.92	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			246.3	237	103.91	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			246.2	237	103.86	Elm Road/Oak Creek Outlet study
698879 SGR CK4 138 699360 NLK GV T 138 1			217	209	103.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.8	266	103.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.7	209	103.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275	266	103.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275	266	103.39	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			346.1	335	103.33	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.29	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.7	248	103.12	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.7	248	103.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.1	229	103.08	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236	229	103.07	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			166.8	162	102.97	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			255.2	248	102.91	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.2	248	102.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.86	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.9	209	102.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.9	209	102.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.77	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			452.6	441	102.64	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			452.3	441	102.56	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			253.9	248	102.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.9	248	102.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.3	223	101.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.3	223	101.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.1	223	101.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.1	223	101.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227	223	101.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227	223	101.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.3	248	101.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.9	223	101.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.3	248	101.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.9	223	101.3	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.5	223	101.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101.02	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101.01	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			175.5	175	100.3	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.5	223	100.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.5	223	100.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.5	223	100.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.5	223	100.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.4	229	100.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.5	266	100.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.3	229	100.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.2	229	100.09	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			335	335	100	MRO-GVL Project Target

Table E4.3.2: Multiple Event Analysis “P6”, 2028 Shoulder - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E4.4.1: Multiple Event Analysis “P6”, 2028 Light Load - Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1095.6	806	135.93	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1095.6	806	135.93	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1			315.7	246	128.35	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			315.6	246	128.29	Elm Road/Oak Creek Outlet study
698865 BLUMND6 138 699268 BUTLER 138 2			216.7	176	123.1	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			216.4	176	122.96	MRO-GVL Project Target
698867 RACINE5 138 699481 ST RITA 138 1			302.2	246	122.86	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			302.1	246	122.81	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			292.3	246	118.82	Elm Road/Oak Creek Outlet study
698865 BLUMND6 138 699268 BUTLER 138 2			205.3	176	116.65	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			205.1	176	116.53	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			406.5	349	116.48	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			406.5	349	116.48	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			406.1	349	116.37	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			406.1	349	116.37	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			204.5	176	116.19	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			204.3	176	116.06	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			216.8	188	115.32	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			216.5	188	115.19	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			400	349	114.61	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			400	349	114.61	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			399.6	349	114.5	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			399.6	349	114.5	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.6	806	109.5	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.5	806	109.5	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			881.9	806	109.41	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			881.3	806	109.34	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698864 BLUMND5 138 699268 BUTLER 138 1			205.5	188	109.31	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			880.3	806	109.22	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			205.3	188	109.19	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			879.7	806	109.14	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			879.1	806	109.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			878.5	806	108.99	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			878	806	108.93	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			877.5	806	108.87	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			204.6	188	108.85	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			876.6	806	108.77	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			204.4	188	108.74	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			876	806	108.69	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			867.5	806	107.63	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			235.7	220	107.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.7	220	107.13	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.7	806	107.04	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.6	806	106.65	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.7	806	105.05	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.6	234	104.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.6	234	104.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.6	234	104.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.6	234	104.95	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.8	806	104.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.8	806	104.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.3	806	104.76	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844	806	104.72	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			843.9	806	104.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			843.9	806	104.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.5	806	104.4	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840.9	806	104.34	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840.3	806	104.26	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.6	806	104.17	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.4	806	103.9	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.3	806	103.89	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.4	806	103.77	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.9	239	103.73	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.8	806	103.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.6	806	103.68	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.5	806	103.66	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835	806	103.6	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835	806	103.6	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.7	806	103.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.5	806	103.42	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.2	806	103.25	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.1	806	103.24	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.4	806	103.16	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.4	806	103.16	PLPL81/W30 Project and 230 kV study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1599	1554	102.89	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			252.9	246	102.8	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1587	1554	102.12	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.1	806	101.88	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.9	806	101.84	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.8	806	101.83	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.4	806	101.78	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.3	806	101.77	PLPL81/W30 Project and 230 kV study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1580.7	1554	101.72	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			818.9	806	101.61	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.6	806	101.44	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.2	806	101.39	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			816.9	806	101.35	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.3	806	101.16	PLPL81/W30 Project and 230 kV study
699268 BUTLER 138 699327 GRANVL 5 138 1			456.2	453	100.71	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			455.8	453	100.61	MRO-GVL Project Target
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.7	806	100.46	PLPL81/W30 Project and 230 kV study
699268 BUTLER 138 699327 GRANVL 5 138 1			454.5	453	100.34	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			454.1	453	100.24	MRO-GVL Project Target
698867 RACINE5 138 699481 ST RITA 138 1			246.2	246	100.1	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1555.4	1554	100.09	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694121 RACINE BUS7 345 2			1594.3	1593	100.08	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.5	806	100.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.5	806	100.06	PLPL81/W30 Project and 230 kV study

Table E4.4.2: Multiple Event Analysis “P6”, 2028 Light Load - Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E4.5.1: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”- Before Project, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699268 BUTLER 138 2			283.6	162	175.06	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			283.3	162	174.89	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			274.2	162	169.28	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			274	162	169.14	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			565.5	335	168.8	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			565.5	335	168.8	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			565.1	335	168.68	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			565.1	335	168.68	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			272.5	162	168.23	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			272.3	162	168.07	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			552.3	335	164.87	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			552.3	335	164.87	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			551.9	335	164.75	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			551.9	335	164.75	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			283.9	175	162.22	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			283.6	175	162.06	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			274.7	175	156.97	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			274.5	175	156.84	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			272.9	175	155.96	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			272.7	175	155.82	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			246.2	162	151.97	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			246.2	162	151.96	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			243.4	162	150.25	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			243.4	162	150.24	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			636.5	441	144.33	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			636	441	144.23	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			633	441	143.54	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			632.5	441	143.43	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			229	162	141.36	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			229	162	141.34	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			246.6	175	140.89	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			246.5	175	140.88	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			243.8	175	139.29	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			243.7	175	139.28	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			301.2	223	135.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			301.1	223	135.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			301.1	223	135.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			301.1	223	135.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			281.8	209	134.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			281.7	209	134.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			303.5	229	132.53	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			228.9	175	130.81	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			228.9	175	130.78	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			209.4	162	129.28	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.4	223	125.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.4	223	125.29	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			202.4	162	124.93	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.7	223	124.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.7	223	124.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			259.8	209	124.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			259.8	209	124.32	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			546.1	441	123.83	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			546	441	123.81	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			258.1	209	123.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			274.6	223	123.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			274.5	223	123.11	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.8	229	123.04	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			198.2	162	122.34	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280	229	122.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255	209	122.01	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			408.3	335	121.88	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			276.9	229	120.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.1	266	120.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.1	266	120.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321	266	120.69	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			194.8	162	120.27	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.4	223	119.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.4	223	119.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.75	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			209.5	175	119.72	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			209.3	175	119.6	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			318.1	266	119.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.5	223	119.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.5	223	119.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.8	266	119.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.8	266	119.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.7	223	119.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.7	223	119.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.8	266	118.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.1	209	118.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.2	209	118.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.5	266	118.22	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			395	335	117.92	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			246.4	209	117.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.7	229	117.78	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.9	229	117.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268	229	117.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.5	266	116.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.4	266	116.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.9	266	116.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.7	266	116.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.6	266	116	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			187.7	162	115.84	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			307.9	266	115.76	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			202.3	175	115.59	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			307.4	266	115.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.3	266	115.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.2	266	115.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307	266	115.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.7	266	115.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.5	266	115.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.4	266	115.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.1	266	115.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.7	266	114.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.6	266	114.89	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			506.5	441	114.86	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			506.1	441	114.77	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			305.2	266	114.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.1	266	114.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.6	266	114.52	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			185.5	162	114.52	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.3	223	114.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.3	223	114.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.3	266	114.39	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			304	266	114.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304	266	114.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304	266	114.28	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			185.1	162	114.26	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.6	223	114.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.5	223	114.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254	223	113.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.9	266	113.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.7	266	113.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.7	266	113.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.9	223	113.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.9	223	113.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.5	266	113.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.5	266	113.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.4	266	113.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.24	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			198.1	175	113.19	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300.9	266	113.13	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			300.9	266	113.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.2	223	113.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.2	223	113.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.7	266	113.03	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			183.1	162	113.03	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.9	223	112.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.9	223	112.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.9	223	112.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.9	223	112.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.4	266	112.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.8	223	112.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.8	223	112.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.9	209	112.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.7	266	112.68	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			377.5	335	112.67	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.2	223	112.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.2	223	112.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.7	229	112.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.1	209	112.5	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			182.2	162	112.48	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			182.2	162	112.45	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.6	223	112.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.6	223	112.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.7	266	112.28	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.8	162	112.25	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.3	223	112.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.3	223	112.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.9	229	112.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.1	223	112.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.1	223	112.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.4	209	112.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250	223	112.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250	223	112.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.11	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.6	162	112.11	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181.4	162	112	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181.4	162	111.95	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.6	223	111.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.6	223	111.94	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.3	162	111.94	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.6	223	111.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.6	223	111.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.3	229	111.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.6	223	111.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.5	223	111.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.5	223	111.89	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.3	162	111.89	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.5	223	111.88	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			181.2	162	111.88	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181.2	162	111.85	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			374.7	335	111.84	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			374.7	335	111.84	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.8	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			374.4	335	111.75	MRO-GVL Project Target
693544 MILWKE CTY T 138 699263 BLUMND4 138 1			374.4	335	111.75	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			181	162	111.74	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.72	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.5	209	111.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.1	223	111.7	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			492.6	441	111.7	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.1	223	111.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.65	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			492.2	441	111.61	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.52	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			180.6	162	111.5	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.2	229	111.46	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.9	209	111.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.8	209	111.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.2	266	111.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.3	223	111.35	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			180.4	162	111.35	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.3	223	111.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.6	209	111.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.28	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			194.7	175	111.28	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248	223	111.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248	223	111.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248	223	111.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248	223	111.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.4	209	111.19	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699089 JAN 138 138 699141 TOWNLINE 138 1			232.3	209	111.17	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			232.3	209	111.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.5	229	111.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.8	223	111.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.7	223	111.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.7	223	111.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.7	223	111.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.3	229	111.04	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			179.9	162	111.03	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.2	229	111.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.2	229	110.99	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			179.8	162	110.98	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.3	223	110.9	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			179.7	162	110.9	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.3	223	110.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.3	223	110.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.3	223	110.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.7	209	110.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.5	229	110.72	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.1	209	110.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.9	229	110.45	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.7	209	110.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.6	209	110.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.6	209	110.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.6	209	110.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.6	229	110.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.5	209	110.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.5	209	110.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.5	209	110.29	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.4	229	110.2	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273	248	110.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273	248	110.08	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.9	229	110.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.9	229	110.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.9	229	109.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.8	229	109.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.5	248	109.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.5	248	109.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.6	209	109.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.8	223	109.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.4	229	109.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.8	223	109.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.8	223	109.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.8	223	109.77	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			483.7	441	109.68	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			228.8	209	109.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.6	229	109.45	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			271.2	248	109.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			271.2	248	109.35	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			366.3	335	109.35	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			228.5	209	109.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.3	229	109.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.3	229	109.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.5	209	109.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.3	209	109.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.3	209	109.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.3	209	109.22	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			228.2	209	109.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.2	209	109.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.6	229	109.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.6	229	108.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.6	248	108.72	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.6	248	108.7	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			364.1	335	108.7	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			269.2	248	108.54	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.2	248	108.54	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			693.5	639	108.53	PLPL81/W30 Project and 230 kV study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			693	639	108.45	PLPL81/W30 Project and 230 kV study
699331 GRANVL 4 138 699492 TOSA-W 138 1			363	335	108.36	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			363	335	108.36	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.8	335	108.31	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			362.7	335	108.26	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			288	266	108.26	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			477	441	108.17	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			225.9	209	108.08	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.9	209	108.08	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.8	248	107.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.8	248	107.97	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.1	229	107.92	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.1	229	107.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.8	266	107.82	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.65	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			360.6	335	107.65	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1026.8	954	107.63	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1026.8	954	107.63	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.59	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1025.9	954	107.53	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			1025.9	954	107.53	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			359.5	335	107.32	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.23	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			187.5	175	107.17	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			285	266	107.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.6	209	106.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.6	209	106.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.4	266	106.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.91	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			683.2	639	106.91	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			284.4	266	106.9	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			682.7	639	106.83	PLPL81/W30 Project and 230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			173.1	162	106.83	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			284.1	266	106.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238	223	106.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238	223	106.72	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			172.8	162	106.68	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.58	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			172.4	162	106.39	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356.3	335	106.35	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			356.3	335	106.35	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.1	223	106.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.32	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			172.1	162	106.22	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.8	223	106.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.8	223	106.2	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			172.1	162	106.2	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.14	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			171.9	162	106.11	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.8	639	106.08	PLPL81/W30 Project and 230 kV study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.8	639	106.08	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.03	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.2	639	105.98	PLPL81/W30 Project and 230 kV study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.2	639	105.98	PLPL81/W30 Project and 230 kV study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.1	639	105.96	PLPL81/W30 Project and 230 kV study
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			677.1	639	105.96	PLPL81/W30 Project and 230 kV study
698864 BLUMND5 138 699268 BUTLER 138 1			185.4	175	105.95	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			171.6	162	105.94	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.91	N. Lake Geneva Area Limitation
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			676.7	639	105.89	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			676.7	639	105.89	PLPL81/W30 Project and 230 kV study
698865 BLUMND6 138 699268 BUTLER 138 2			171.5	162	105.88	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.76	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			171.3	162	105.74	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			354.2	335	105.74	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			171.3	162	105.73	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			171.2	162	105.7	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			171.2	162	105.66	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			184.9	175	105.66	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			353.1	335	105.39	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235	223	105.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235	223	105.37	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			170.7	162	105.36	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.5	162	105.24	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			352.5	335	105.23	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			352.5	335	105.23	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.4	162	105.17	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.3	223	105.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.3	223	105.07	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.9	335	105.04	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.9	335	105.04	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			170.1	162	105	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			462.9	441	104.96	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.3	229	104.95	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.6	335	104.94	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			351.6	335	104.94	MRO-GVL Project Target
693580 CYPRESS 345 699247 ARCADIAN 345 345 1			670.5	639	104.93	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.1	229	104.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240	229	104.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.5	229	104.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.6	209	104.57	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.9	175	104.53	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			350	335	104.48	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			350	335	104.48	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			218.3	209	104.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.9	223	104.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.2	229	104.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.9	223	104.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.3	209	104.43	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			349.6	335	104.36	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			349.4	335	104.3	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.7	209	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.2	223	104.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.2	223	104.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.1	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.1	175	104.06	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			276.8	266	104.05	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			182.1	175	104.05	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			217.4	209	104.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.6	266	104	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			276.6	266	103.99	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			458.5	441	103.97	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.7	223	103.92	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			168.3	162	103.92	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.7	223	103.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.91	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			181.7	175	103.84	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			990.6	954	103.83	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			990.2	954	103.79	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.6	335	103.76	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			347.6	335	103.76	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			989.6	954	103.73	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			457.5	441	103.73	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			168	162	103.7	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.5	175	103.7	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			989.2	954	103.69	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.3	229	103.62	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			181.3	175	103.61	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.2	175	103.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.9	335	103.56	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			346.9	335	103.56	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.2	175	103.55	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.2	175	103.52	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.1	175	103.51	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			181.1	175	103.51	MRO-GVL Project Target
699085 NLG 138 138 699360 NLK GV T 138 1			236	228	103.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			235.9	228	103.47	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.2	209	103.43	N. Lake Geneva Area Limitation
698864 BLUMND5 138 699268 BUTLER 138 1			180.9	175	103.39	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			346.2	335	103.36	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			520.8	504	103.34	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			520.8	504	103.34	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.7	229	103.34	N. Lake Geneva Area Limitation
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			520.5	504	103.27	MRO-GVL Project Target
699328 GRANVL 6 138 694126 GRANVILLE B4 345 1			520.5	504	103.27	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			180.4	175	103.11	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166.9	162	103.04	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166.9	162	103.03	MRO-GVL Project Target
698864 BLUMND5 138 699268 BUTLER 138 1			180.3	175	103.02	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.5	223	102.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.5	223	102.91	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			981.8	954	102.91	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			453.5	441	102.83	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			214.9	209	102.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.2	229	102.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.8	223	102.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.6	223	102.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.6	223	102.5	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			343.4	335	102.49	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			343.4	335	102.49	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			166	162	102.48	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.7	229	102.47	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			451.8	441	102.45	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.44	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			451.8	441	102.44	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.4	223	102.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.4	223	102.42	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.5	229	102.4	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			165.9	162	102.38	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.9	162	102.38	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			272.1	266	102.28	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			451	441	102.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			342.6	335	102.27	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.7	209	102.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.1	229	102.21	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			450.5	441	102.16	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.4	162	102.13	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			450.3	441	102.1	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.08	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.08	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.9	335	102.06	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341.9	335	102.06	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			450.1	441	102.06	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.3	162	102.06	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			450	441	102.04	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			449.9	441	102.02	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			449.8	441	102.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			449.8	441	101.99	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			165.2	162	101.96	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.6	954	101.95	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.6	954	101.95	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.5	954	101.94	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			972.5	954	101.94	MRO-GVL Project Target
699085 NLG 138 138 699360 NLK GV T 138 1			232.4	228	101.93	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			449.4	441	101.91	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699360 NLK GV T 138 1			232.3	228	101.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213	209	101.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.9	209	101.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.1	223	101.85	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			341	335	101.79	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			341	335	101.79	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			341	335	101.78	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.9	954	101.77	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.5	954	101.73	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.5	954	101.73	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.4	954	101.72	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			970.4	954	101.72	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			448.6	441	101.71	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			164.7	162	101.68	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			212.4	209	101.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.4	209	101.62	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			448.1	441	101.62	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.4	223	101.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.4	223	101.51	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699268 BUTLER 138 2			164.4	162	101.51	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.3	223	101.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270	266	101.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.3	223	101.47	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.47	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			447.1	441	101.38	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.36	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			339.6	335	101.36	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.35	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.5	335	101.35	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.9	441	101.35	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.7	441	101.29	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.6	441	101.27	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			339.2	335	101.26	MRO-GVL Project Target
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.8	229	101.24	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			446.2	441	101.18	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			446.2	441	101.17	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.9	335	101.16	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.9	335	101.16	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.16	N. Lake Geneva Area Limitation
699268 BUTLER 138 699327 GRANVL 5 138 1			445.9	441	101.12	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.5	223	101.1	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.5	954	101.1	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.5	954	101.1	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.8	441	101.1	MRO-GVL Project Target
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.3	209	101.09	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.3	209	101.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.4	223	101.09	N. Lake Geneva Area Limitation
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.7	335	101.09	MRO-GVL Project Target
693544 MILWKE CTY T 138 699492 TOSA-W 138 1			338.7	335	101.09	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.2	954	101.07	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			964.3	954	101.07	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699268 BUTLER 138 699327 GRANVL 5 138 1			445.7	441	101.07	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			163.6	162	101.01	MRO-GVL Project Target
699268 BUTLER 138 699327 GRANVL 5 138 1			445.4	441	101	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			338.3	335	100.99	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			211	209	100.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211	209	100.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			230.2	228	100.95	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			963.1	954	100.95	MRO-GVL Project Target
699085 NLG 138 138 699360 NLK GV T 138 1			230.2	228	100.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.1	229	100.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.1	223	100.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225	223	100.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.9	229	100.84	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			961.7	954	100.81	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.7	223	100.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.7	229	100.75	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.4	335	100.72	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			337.4	335	100.72	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.3	223	100.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.3	223	100.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.2	209	100.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.2	209	100.58	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.9	335	100.57	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.9	335	100.57	MRO-GVL Project Target
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.8	335	100.53	MRO-GVL Project Target

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.6	335	100.49	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.6	335	100.49	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			162.8	162	100.49	MRO-GVL Project Target
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			958.6	954	100.48	MRO-GVL Project Target
698865 BLUMND6 138 699268 BUTLER 138 2			162.8	162	100.47	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.5	335	100.44	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336.5	335	100.44	MRO-GVL Project Target
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249	248	100.42	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			336	335	100.3	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			336	335	100.3	MRO-GVL Project Target
698879 SGR CK4 138 699360 NLK GV T 138 1			209.6	209	100.3	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			335.9	335	100.28	MRO-GVL Project Target
699331 GRANVL 4 138 699492 TOSA-W 138 1			335.9	335	100.28	MRO-GVL Project Target
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.5	223	100.23	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			596.3	595	100.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.5	223	100.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.5	229	100.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.4	209	100.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.3	209	100.15	N. Lake Geneva Area Limitation
694124 GRANVILLE B2 345 699247 ARCADIAN 345 345 1			955.1	954	100.12	MRO-GVL Project Target
694105 ROR BUS3 138 699141 TOWNLINE 138 1			595.6	595	100.1	N. Lake Geneva Area Limitation
699331 GRANVL 4 138 699492 TOSA-W 138 1			335.2	335	100.07	MRO-GVL Project Target

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Table E4.5.2: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”– Before Project, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
693421	STATE LINE	138			0.8152	mitigation available
698518	SPRG VAL	138			0.818	mitigation available
693710	BALSAM 138	138			0.828	mitigation available

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Table E5.1.1: System Intact, 2028 Summer Peak – Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E5.1.2: System Intact, 2028 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E5.2.1: System Intact, 2033 Summer Peak - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1488	103.08	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		-	266	101.4	N. Lake Geneva Area Limitation

Table E5.2.2: System Intact, 2033 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E5.3.1: System Intact, 2028 Shoulder - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E5.3.2: System Intact, 2028 Shoulder - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E5.4.1: System Intact, 2028 Light Load - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1554	103.55	Elm Road/Oak Creek Outlet study

Table E5.4.2: System Intact, 2028 Light Load - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E5.5.1: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E5.5.2: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E6.1.1: Single Event Analysis, 2028 Summer Peak - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		296.9	246	120.68	N. Lake Geneva Area Limitation
698095 SUN 138 699963 JOHNSTOWN 138 1		296.9	246	120.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		264.7	223	118.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		264.7	223	118.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		264.7	223	118.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		264.7	223	118.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		263	223	117.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		263	223	117.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		262.6	223	117.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		262.5	223	117.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		267.1	229	116.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		267.1	229	116.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		265.4	229	115.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		264.9	229	115.68	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		282.9	246	115.01	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		282.9	246	115	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.7	266	113.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.9	266	112.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.9	266	112.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.2	266	112.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		234.8	209	112.35	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		234.8	209	112.35	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		233.1	209	111.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		232.7	209	111.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		295.3	266	111	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		295.2	266	111	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		295.2	266	110.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		295.2	266	110.99	N. Lake Geneva Area Limitation
698877 MORLND6 138 699344 KANSAS-6 138 1		231.3	210	110.14	Oak Creek Asset Renewal Project
699085 NLG 138 138 699086 ELK 138 138 1		292.8	266	110.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.7	266	110.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.5	266	109.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.4	266	109.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		271.3	248	109.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290.7	266	109.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290.6	266	109.25	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		270.6	248	109.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		270.4	248	109.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		270.4	248	109.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.3	266	108.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288	266	108.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.2	266	107.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.2	266	107.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.1	266	107.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.9	266	107.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.9	266	107.5	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		266.4	248	107.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		265.6	248	107.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		283.8	266	106.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		283.4	266	106.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.7	266	105.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.7	266	105.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281	266	105.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.3	266	105.37	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		261.3	248	105.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278	266	104.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		276.9	266	104.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		253.3	246	102.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		253.2	246	102.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.8	246	101.94	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		651.4	639	101.93	Cypress area 345 kV uprate study
698090 BOL 138 138 699086 ELK 138 138 1		251.3	248	101.33	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		323.9	321	100.89	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		323.8	321	100.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		224.7	223	100.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		224.7	223	100.76	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		249.7	248	100.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		223.7	223	100.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		223.7	223	100.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		223.7	223	100.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		223.7	223	100.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		223.7	223	100.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		223.7	223	100.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.8	266	100.28	N. Lake Geneva Area Limitation

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Table E6.1.2: Single Event Analysis, 2028 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8578	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8578	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8578	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8578	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8579	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8579	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8579	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8579	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8579	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8579	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8579	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8581	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8582	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8582	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8582	LTC reverse flow mitigation
699422	PENNSYLV	138		0.8822	Oak Creek Asset Renewal Project
699264	BRANCH	138		0.888	Oak Creek Asset Renewal Project
699252	ALERTON9	138		0.8897	Oak Creek Asset Renewal Project

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Table E6.2.1: Single Event Analysis, 2033 Summer Peak - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		306.8	246	124.71	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		306.8	246	124.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		275.9	223	123.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		275.9	223	123.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		275.8	223	123.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		275.8	223	123.69	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		993.6	806	123.28	PLPL81/W30 Uprate Project
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		274.1	223	122.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		274.1	223	122.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		273.7	223	122.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		273.7	223	122.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		278.2	229	121.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		278.2	229	121.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		276.5	229	120.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		276.1	229	120.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		319.2	266	120	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		317.5	266	119.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		317.5	266	119.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		316.8	266	119.09	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		292.8	246	119.02	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		292.8	246	119.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		245.8	209	117.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		245.8	209	117.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		310.8	266	116.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		310.8	266	116.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		310.8	266	116.83	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		310.8	266	116.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		244.1	209	116.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		243.7	209	116.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		308.9	266	116.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		308.3	266	115.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		308.3	266	115.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		308.2	266	115.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		308.1	266	115.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		307	266	115.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		304.8	266	114.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.6	266	114.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.6	266	114.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.5	266	114.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		282.5	248	113.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		302.7	266	113.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		282.2	248	113.77	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		281.7	248	113.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		281.7	248	113.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.4	266	113.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.4	266	113.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.1	266	112.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		299.1	266	112.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.6	266	112.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.4	266	112.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.3	266	112.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.7	266	111.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		277.6	248	111.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		276.7	248	111.57	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		294.5	266	110.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.9	266	110.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		272.7	248	109.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291.7	266	109.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266	246	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		240.7	223	107.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		240.7	223	107.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		240.7	223	107.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		240.7	223	107.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		265.4	246	107.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		240.3	223	107.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		240.3	223	107.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		240.3	223	107.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		240.3	223	107.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		239.7	223	107.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		239.7	223	107.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		264.4	246	107.47	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		865.6	806	107.39	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		863.5	806	107.13	PLPL81/W30 Uprate Project
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243	229	106.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243	229	106.13	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		678.1	639	106.11	Cypress area 345 kV uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		236.6	223	106.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		236.6	223	106.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		242.6	229	105.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		242.6	229	105.94	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		339.4	321	105.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		242.1	229	105.71	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		262	248	105.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.7	266	105.54	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		338.7	321	105.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		261	248	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		257	246	104.46	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		238.9	229	104.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		256.4	246	104.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		255.5	246	103.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		255.4	246	103.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		257.3	248	103.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		257.3	248	103.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		255	246	103.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		254.8	246	103.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		254.8	246	103.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		254.7	246	103.55	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		833.9	806	103.47	PLPL81/W30 Uprate Project
698090 BOL 138 138 699086 ELK 138 138 1		256.5	248	103.41	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1		350.4	340	103.05	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		350.4	340	103.05	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		350.3	340	103.04	230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		830.4	806	103.03	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		830.4	806	103.03	PLPL81/W30 Uprate Project
698090 BOL 138 138 699086 ELK 138 138 1		255.5	248	103.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.9	266	102.96	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2		344.9	335	102.95	Additional Study Required
699268 BUTLER 138 699331 GRANVL 4 138 2		344.9	335	102.95	Additional Study Required
699085 NLG 138 138 699086 ELK 138 138 1		273.7	266	102.88	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		254.7	248	102.68	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		329.5	321	102.65	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		329.4	321	102.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		254.5	248	102.62	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		254.3	248	102.55	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.6	1146	102.5	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.6	1146	102.5	Elm Road/Oak Creek Outlet study
698090 BOL 138 138 699086 ELK 138 138 1		254.2	248	102.49	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.5	1146	102.49	Elm Road/Oak Creek Outlet study
698090 BOL 138 138 699086 ELK 138 138 1		254.2	248	102.48	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.4	1146	102.48	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.4	1146	102.47	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1174.3	1146	102.47	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1		242.8	237	102.46	Elm Road/Oak Creek Outlet study
699283 CONCRD 4 138 699293 COONEY 138 1		328.8	321	102.43	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1172.3	1146	102.29	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1172.2	1146	102.29	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1172.2	1146	102.29	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1172.1	1146	102.28	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1170.4	1146	102.13	Elm Road/Oak Creek Outlet study
699283 CONCRD 4 138 699293 COONEY 138 1		327.7	321	102.1	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		327.5	321	102.03	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1164.8	1146	101.64	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1164.1	1146	101.58	Elm Road/Oak Creek Outlet study
699283 CONCRD 4 138 699293 COONEY 138 1		325.5	321	101.41	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		325.5	321	101.41	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1158.8	1146	101.12	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1158.5	1146	101.09	Elm Road/Oak Creek Outlet study

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211	209	100.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211	209	100.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.6	266	100.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211	209	100.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211	209	100.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.5	175	100.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.5	175	100.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.4	175	100.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.1	266	100.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.4	175	100.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.4	175	100.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		176.4	175	100.78	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		307.9	306	100.62	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1		336.8	335	100.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		210.1	209	100.52	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1		305.2	304	100.41	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1148.5	1146	100.22	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1148.4	1146	100.21	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		266	266	100	N. Lake Geneva Area Limitation

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Table E6.2.2: Single Event Analysis, 2033 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8572	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8572	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8572	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8572	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8575	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699422	PENNSYLV	138		0.8895	Oak Creek Asset Renewal Project
699264	BRANCH	138		0.8953	Oak Creek Asset Renewal Project
699252	ALERTON9	138		0.8973	Oak Creek Asset Renewal Project

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.3.1: Single Event Analysis, 2028 Shoulder - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		914.8	806	113.49	PLPL81/W30 Uprate Project
699085 NLG 138 138 699086 ELK 138 138 1		282.6	266	106.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.5	266	105.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.5	266	105.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.8	266	105.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		234.4	223	105.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		234.4	223	105.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		234.3	223	105.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		234.3	223	105.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		233.3	223	104.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		233.2	223	104.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		233	223	104.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		233	223	104.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		236.7	229	103.36	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		236.7	229	103.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		274.7	266	103.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		274	266	103	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.9	266	102.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		235.6	229	102.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		215	209	102.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		215	209	102.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.5	266	102.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.5	266	102.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.5	266	102.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.5	266	102.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		235.4	229	102.78	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		252.4	246	102.59	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		252.4	246	102.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		213.9	209	102.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		272.1	266	102.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		213.7	209	102.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.2	266	101.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.2	266	101.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.1	266	101.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.1	266	101.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.1	266	101.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271	266	101.88	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		648	639	101.42	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		269.8	266	101.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.9	266	101.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.2	266	100.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.2	266	100.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.7	266	100.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.6	266	100.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.3	266	100.47	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.3.2: Single Event Analysis, 2028 Shoulder - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.868	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.868	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8682	LTC reverse flow mitigation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.4.1: Single Event Analysis, 2028 Light Load - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		1113.3	806	138.12	PLPL81/W30 Uprate Project
698867 RACINE5 138 699481 ST RITA 138 1		295.3	246	120.05	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1		290.2	246	117.96	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		901.2	806	111.81	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		890.8	806	110.53	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		857.2	806	106.35	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		851.9	806	105.69	PLPL81/W30 Uprate Project
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		851.9	806	105.69	PLPL81/W30 Uprate Project
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1269.2	1231	103.11	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1268.1	1231	103.01	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1258.3	1231	102.22	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1241.9	1231	100.89	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1241.9	1231	100.88	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1		1015.5	1010	100.54	PLPL81/W30 Uprate Project
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1235.4	1231	100.36	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1235.2	1231	100.34	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1235.2	1231	100.34	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1234.9	1231	100.32	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1231.3	1231	100.02	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1231.3	1231	100.02	Elm Road/Oak Creek Outlet study

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.4.2: Single Event Analysis, 2028 Light Load - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.5.1: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		303.5	266	114.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		302.4	266	113.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		302.4	266	113.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.7	266	113.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.9	266	111.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.9	266	111.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.8	266	111.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.8	266	111.59	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		712.1	639	111.45	Cypress Area 345 kV Uprate study
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		273.8	246	111.29	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		273.8	246	111.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		295.5	266	111.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.4	266	110.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.4	266	110.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		246.3	223	110.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		246.3	223	110.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		246.2	223	110.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		246.2	223	110.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.2	266	110.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.1	266	110.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.5	266	109.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.4	266	109.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		244.9	223	109.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.2	266	109.84	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		244.9	223	109.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		244.9	223	109.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		244.9	223	109.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		290.9	266	109.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.6	266	108.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.5	266	108.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		248.6	229	108.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		248.6	229	108.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		226.8	209	108.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		226.8	209	108.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		247.3	229	107.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		247.2	229	107.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		225.5	209	107.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		225.4	209	107.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.7	266	107.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.7	266	107.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.2	266	107.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.8	266	107.43	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2		357.3	335	106.66	Additional Study Required
699268 BUTLER 138 699331 GRANVL 4 138 2		357.3	335	106.66	Additional Study Required
699085 NLG 138 138 699086 ELK 138 138 1		282.3	266	106.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.6	266	105.85	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		260.2	246	105.78	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		260.2	246	105.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.3	266	105.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		277.9	266	104.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		256.7	246	104.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		252.1	246	102.47	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
693580 CYPRESS 345 694018 FORST JT B5 345 1		668.9	659	101.5	Cypress Area 345 kV Uprate study
698090 BOL 138 138 699086 ELK 138 138 1		250.9	248	101.16	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		248.7	248	100.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		246.3	246	100.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		246.2	246	100.08	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E6.5.2: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8679	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8679	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8679	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8679	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8679	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8679	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8679	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8679	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8679	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8679	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8679	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8679	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8679	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8679	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.868	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.868	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8681	LTC reverse flow mitigation

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Table E7.1.1: Multiple Event Analysis “P3”, 2028 Summer Peak - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			332.2	266	124.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			329.8	266	123.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.4	223	123.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.4	223	123.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.4	223	123.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.4	223	123.48	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.8	229	121.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.7	229	121.28	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	120.65	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	120.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.5	223	119.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.5	223	119.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.4	266	119.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.3	266	119.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.9	266	118.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.8	266	118.72	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.6	266	116.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.5	266	116.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258	223	115.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258	223	115.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.8	223	115.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.8	223	115.59	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	114.97	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	114.96	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			303.6	266	114.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.5	266	114.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.4	229	113.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.5	209	113.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.1	229	113.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.3	209	113.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302	266	113.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.7	266	113.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.1	266	113.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301	266	113.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.2	223	113.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.1	223	113.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252	223	112.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252	223	112.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.53	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.2	266	112.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.3	223	112.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.3	223	112.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.2	223	112.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.2	223	112.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298	266	112.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298	266	112.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.6	266	111.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.3	266	111.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.5	229	111.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.3	229	111.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.6	229	110.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.6	229	110.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.2	209	109.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.9	209	109.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.5	223	106.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.5	223	106.5	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.2	209	106.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.5	229	106.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.6	209	105.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.5	209	105.51	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.78	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.8	248	104.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.9	229	104.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.6	266	103.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.6	266	103.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.6	248	103.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.8	248	103.55	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.8	248	103.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.8	223	103.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.8	223	103.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.8	223	103.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.8	223	103.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	103.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.75	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.5	248	102.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.1	266	102.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.7	266	102.15	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.4	304	102.11	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.4	304	102.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	101.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.6	266	101.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.2	266	101.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.1	223	101.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.1	223	101.39	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.39	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.7	266	101.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226	223	101.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226	223	101.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226	223	101.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.9	223	101.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.9	223	101.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.21	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.4	304	101.13	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.4	304	101.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.99	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	100.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.92	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	100.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.4	266	100.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.2	266	100.06	N. Lake Geneva Area Limitation

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Table E7.1.2: Multiple Event Analysis “P3”, 2028 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E7.2.1: Multiple Event Analysis “P3”, 2033 Summer Peak - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			347.8	266	130.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			345.3	266	129.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			286.1	223	128.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			286.1	223	128.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.7	223	128.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.7	223	128.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			288.5	229	125.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			288.1	229	125.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.5	223	125.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.5	223	125.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			333.1	266	125.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.2	223	125.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.2	223	125.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.6	223	124.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			332.3	266	124.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.6	223	124.92	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	124.68	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	124.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			330.6	266	124.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			329.8	266	123.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.8	229	123.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.5	229	122.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.5	266	122.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.8	266	122.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.9	209	122.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.5	209	122.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.2	223	120.72	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.2	223	120.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.9	266	120.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.9	223	120.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.9	223	120.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.4	266	120.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319	266	119.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.8	266	119.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.2	223	119.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.2	223	119.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.9	266	119.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.5	266	119.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.3	266	119.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.3	209	119.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.3	266	119.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.2	266	119.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249	209	119.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.5	266	118.99	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	118.99	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	118.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.3	266	118.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.2	266	118.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.5	209	118.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.79	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			316	266	118.78	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.76	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			248.2	209	118.76	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.8	266	118.71	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			271.5	229	118.58	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			271.3	229	118.47	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.1	266	118.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315	266	118.43	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.9	266	118.38	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.9	266	118.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.8	266	118.36	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.8	266	118.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.8	266	118.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.7	266	118.32	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.6	266	118.28	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			314.5	266	118.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			263.3	223	118.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			263.3	223	118.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			263.3	223	118.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			263.3	223	118.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			313.5	266	117.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			313.4	266	117.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			313.4	266	117.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			313.4	266	117.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			313.4	266	117.83	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			313.4	266	117.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.6	223	117.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.6	223	117.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.5	223	117.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.5	223	117.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.7	229	116.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.6	229	115.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			263.9	229	115.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			263.9	229	115.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.2	209	114.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.9	209	114.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.2	209	113.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.2	209	113.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.5	223	113.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.5	223	113.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.7	266	112.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.5	266	112.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.69	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.4	209	111.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249	223	111.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.4	209	111.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249	223	111.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.2	266	111.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.1	266	111.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.8	229	111.28	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			231.7	209	110.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.6	209	110.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.4	223	110.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.4	223	110.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.1	223	109.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245	223	109.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.2	266	109.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.3	229	109.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.7	266	108.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.89	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270	248	108.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.6	248	108.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.1	223	108.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242	223	108.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.9	223	108.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.9	223	108.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.9	223	108.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.9	223	108.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.8	223	108.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.8	223	108.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.2	266	108.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288	266	108.28	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268.4	248	108.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	108.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.7	229	108.19	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			287.7	266	108.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.4	229	108.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	107.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.9	248	107.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	107.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.4	248	107.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.1	266	107.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.5	266	106.96	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.2	248	106.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.3	266	106.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.4	229	106.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.3	229	106.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.2	229	106.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.2	229	106.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.58	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263	248	106.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.96	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.7	248	105.92	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	105.78	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	105.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.3	209	104.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.6	248	104.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	104.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	104.3	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.87	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.64	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.58	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.57	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			-	266	103.55	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.6	209	103.15	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.3	209	102.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			228.9	223	102.66	N. Lake Geneva Area Limitation
699283 CONCRD 4	138	699293 COONEY	138 1			-	436	102.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			228.9	223	102.65	N. Lake Geneva Area Limitation
699283 CONCRD 4	138	699293 COONEY	138 1			-	436	102.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			228.8	223	102.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			228.8	223	102.61	N. Lake Geneva Area Limitation
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.52	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.52	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.51	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.5	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.48	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.48	Elm Road/Oak Creek Outlet study
699283 CONCRD 4	138	699293 COONEY	138 1			-	436	102.47	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			311.4	304	102.44	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			253.8	248	102.34	N. Lake Geneva Area Limitation
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			824.8	806	102.33	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.3	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.3	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.3	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6	345	699367 ELM ROAD	345 1			-	1488	102.28	Elm Road/Oak Creek Outlet study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			824	806	102.23	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.7	304	102.22	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.8	806	102.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.6	806	102.18	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	102.13	Elm Road/Oak Creek Outlet study
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	102.12	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	102.05	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.5	806	101.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.5	806	101.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.1	806	101.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.1	806	101.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.9	806	101.73	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			252.3	248	101.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.3	209	101.6	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			818.8	806	101.59	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	101.58	Elm Road/Oak Creek Outlet study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308.8	304	101.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.2	209	101.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.2	209	101.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.1	209	101.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.45	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.7	806	101.45	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.44	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.6	806	101.44	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.6	806	101.44	PLPL81/W30 Project and 230 kV study
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	101.43	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1			-	436	101.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.42	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.4	806	101.42	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.4	806	101.42	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.1	223	101.41	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308	304	101.33	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	101.17	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	101.16	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.5	806	101.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.1	806	101	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.1	806	101	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.3	229	100.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.2	229	100.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.2	248	100.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.85	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.1	248	100.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			-	229	100.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.7	223	100.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268	266	100.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.6	223	100.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.6	223	100.72	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.1	806	100.5	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	100.26	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1488	100.25	Elm Road/Oak Creek Outlet study

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Table E7.2.2: Multiple Event Analysis “P3”, 2033 Summer Peak - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E7.3.1: Multiple Event Analysis “P3”, 2028 Shoulder - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			304.2	266	114.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.1	266	110.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.9	266	110.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.7	266	110.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.4	266	109.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.7	223	109.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.7	223	109.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.6	223	109.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.6	223	109.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.4	266	109.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.2	266	109.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.1	229	107.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.9	229	107.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.3	209	107.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.1	209	107.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280	266	105.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280	266	105.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.6	266	104.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.6	266	104.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.6	266	104.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.5	266	104.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.5	266	104.71	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			278.5	266	104.7	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.2	266	103.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.2	266	103.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.1	266	103.81	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.1	266	103.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.1	266	103.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.1	266	103.78	N. Lake Geneva Area Limitation
698095 SUN 138	138	699963 JOHNSTOWN	138 1			-	321	102.56	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			-	306	102.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			267.2	266	100.46	N. Lake Geneva Area Limitation

Table E7.3.2: Multiple Event Analysis “P3”, 2028 Shoulder - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E7.4.1: Multiple Event Analysis “P3”, 2028 Light Load - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.4	806	104.89	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			842.9	806	104.57	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.9	806	104.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.4	806	104.39	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.8	806	104.19	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.7	806	103.44	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.7	806	103.44	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	103.1	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			830.3	806	103.01	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	102.22	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822	806	101.98	PLPL81/W30 Project and 230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.92	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.91	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.37	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.35	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.35	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.33	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.03	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1			-	1554	100.03	Elm Road/Oak Creek Outlet study

Table E7.4.2: Multiple Event Analysis “P3”, 2028 Light Load - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

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Table E7.5.1: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loadin g	Comment
699085 NLG 138 138 699086 ELK 138 138 1			327.6	266	123.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.2	266	122.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319	266	119.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.6	266	119.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.6	266	116.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.7	223	115.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.7	223	115.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305	266	114.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.9	266	114.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.6	266	113.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302	266	113.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302	266	113.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302	266	113.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.1	209	113.43	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			259.1	229	113.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.7	266	112.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.7	266	112.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.35	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.35	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			-	321	111.26	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			-	306	111.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.7	209	109.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.6	209	109.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.9	266	107.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			-	331	105.75	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			-	335	105.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.1	223	104.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234	223	104.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234	223	104.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.9	223	104.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	104.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.2	223	104.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.4	229	103.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.3	229	103.18	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			657.3	639	102.86	Cypress Area 345 kV Uprate study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			273.5	266	102.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.7	209	102.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.6	209	102.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	102.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.5	229	102.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271	266	101.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.9	209	101.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.8	209	101.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.8	266	101.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.7	223	100.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.7	223	100.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	100.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			-	266	100.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223	223	100.02	N. Lake Geneva Area Limitation

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Table E7.5.2: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E8.1.1: Multiple Event Analysis “P6”, 2028 Summer Peak - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			320.3	223	143.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			320.3	223	143.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			322.7	229	140.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			290.5	209	138.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			290.4	209	138.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			305.4	223	136.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			305.4	223	136.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			302.7	223	135.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			302.7	223	135.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			307.8	229	134.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			297.8	223	133.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			297.8	223	133.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			305.1	229	133.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			275.1	209	131.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			300.1	229	131.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			272.5	209	130.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			288.6	223	129.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			288.6	223	129.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			286.9	223	128.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			286.9	223	128.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			267.6	209	128.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284	223	127.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284	223	127.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			290.9	229	127.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.2	229	126.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.4	229	125.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277	223	124.23	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277	223	124.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			258.9	209	123.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			328.7	266	123.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			328.6	266	123.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			274.9	223	123.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			274.9	223	123.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.2	209	123.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.6	223	122.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.6	223	122.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.1	266	122.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326	266	122.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.1	223	122.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.1	223	122.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.4	266	122.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.8	223	122.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.8	223	122.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.4	266	122.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.6	223	122.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.6	223	122.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.1	223	122.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.1	223	122.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.4	229	122	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.8	266	121.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.8	266	121.74	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.4	209	121.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271	223	121.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271	223	121.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			270.3	223	121.2	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			270.3	223	121.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			270.1	223	121.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			270.1	223	121.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.2	229	121.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.7	223	120.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.7	223	120.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.6	223	120.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.6	223	120.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.5	223	120.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.5	223	120.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.5	223	120.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.5	223	120.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.2	223	120.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.1	223	120.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.7	223	120.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			276	229	120.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.7	223	120.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.6	223	120.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.6	223	120.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.2	266	120.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.3	223	120.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.3	223	120.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.5	229	120.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.2	223	120.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.2	223	120.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.1	229	120.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.9	223	120.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.8	223	120.1	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.8	223	120.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274.9	229	120.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.6	223	120	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.6	223	119.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274.5	229	119.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.76	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			296.6	248	119.58	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			296.5	248	119.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			273.4	229	119.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266	223	119.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.9	223	119.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.9	223	119.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317	266	119.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.6	229	119.05	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			295.1	248	119.01	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			295.1	248	119.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.5	229	118.99	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			294.7	248	118.83	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			294.7	248	118.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316	266	118.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.1	229	118.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272	229	118.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.9	229	118.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.5	229	118.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.2	266	118.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.1	229	118.38	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			396.5	335	118.35	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			396.5	335	118.35	mitigation available
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271	229	118.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.7	266	118.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.1	209	118.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.7	229	118.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293.1	248	118.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.5	223	118.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.5	223	118.17	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			293	248	118.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.5	223	118.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.5	223	118.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.6	229	118.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314	266	118.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.2	229	118	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.2	229	117.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.9	229	117.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.7	248	117.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.7	248	117.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.6	266	117.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.6	266	117.53	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.2	248	117.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.2	248	117.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245	209	117.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.2	229	117.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.5	266	117.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.6	266	116.77	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			243.8	209	116.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310	266	116.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.1	209	116.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.7	209	116.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.9	229	116.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.7	266	116.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.6	209	116.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.5	266	115.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.3	266	115.91	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.1	209	115.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.3	223	115.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.1	266	115.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.3	223	115.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.2	223	115.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.2	223	115.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.9	266	115.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.8	223	115.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.6	266	115.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.8	223	115.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.6	223	115.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.6	223	115.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			241.2	209	115.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307	266	115.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.9	266	115.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.4	266	115.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.4	266	115.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.4	266	115.17	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			306.3	266	115.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.2	266	115.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.7	223	115.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.7	223	115.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306	266	115.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.3	209	114.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.4	223	114.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.3	223	114.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.3	223	114.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.3	223	114.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.2	209	114.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.5	266	114.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.4	266	114.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.9	223	114.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.9	223	114.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.9	223	114.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.9	223	114.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.1	266	114.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.7	209	114.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.7	209	114.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.7	209	114.69	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.7	209	114.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.9	266	114.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.8	266	114.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.5	266	114.46	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.2	209	114.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.3	266	114.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.3	266	114.4	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			383	335	114.32	mitigation available

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699410 PARIS WE 138 699982 RAYMOND 138 1			383	335	114.32	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			304	266	114.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.8	209	114.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.9	266	114.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.9	266	114.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.7	209	114.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.4	209	114.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.3	209	114.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.9	209	113.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.9	209	113.83	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			237.8	209	113.79	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			237.8	209	113.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.6	229	113.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.7	223	113.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.7	223	113.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.7	209	113.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.4	266	113.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.3	266	113.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.2	229	113.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.3	209	113.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302	266	113.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260	229	113.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.8	266	113.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			301.4	266	113.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.9	266	113.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			259	229	113.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.1	223	113.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.1	223	113.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.7	266	113.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.2	209	113.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252	223	113	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.2	209	113	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252	223	112.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.7	229	112.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.6	229	112.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.3	266	112.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.3	266	112.88	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			378	335	112.84	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			378	335	112.84	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.3	229	112.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.1	229	112.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.2	266	112.09	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			298.1	266	112.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			297.8	266	111.96	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			233.8	209	111.87	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			233.8	209	111.87	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			256	229	111.8	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			297.2	266	111.72	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			297.1	266	111.7	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			296.7	266	111.55	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			296.6	266	111.51	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.7	266	111.18	N. Lake Geneva Area Limitation
693647 BERRYVILLE	138	699409 PARIS B5	138 1			446.9	402	111.17	mitigation available
693647 BERRYVILLE	138	699409 PARIS B5	138 1			446.9	402	111.16	mitigation available
699085 NLG 138	138	699086 ELK 138	138 1			295.7	266	111.16	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			254.5	229	111.11	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			254.3	229	111.06	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.3	266	110.63	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.3	266	110.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			246.6	223	110.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			246.6	223	110.57	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.8	266	110.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			246	223	110.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			246	223	110.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			245	223	109.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			245	223	109.85	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			228.8	209	109.46	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			228.7	209	109.43	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			271.3	248	109.38	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			271.3	248	109.38	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			270.7	248	109.14	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			270.6	248	109.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.2	223	109.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.2	223	109.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290	266	109.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290	266	109.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.8	209	108.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			364.5	335	108.81	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			364.5	335	108.8	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.4	223	108.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.4	223	108.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.2	266	108.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.4	223	108.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.4	223	108.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.8	209	108.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.3	229	108.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.6	209	108.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.5	209	108.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.4	209	108.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.4	209	108.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241	223	108.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241	223	108.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.5	266	108.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.9	223	108.02	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.9	223	108.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.9	223	108.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.3	229	108.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	108	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.6	223	107.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.6	223	107.87	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			361.2	335	107.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.7	266	107.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.5	266	107.71	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.1	248	107.69	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267	248	107.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.4	266	107.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.9	209	107.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.1	266	107.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.1	266	107.54	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.6	248	107.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.6	248	107.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.46	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			359.6	335	107.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.6	229	107.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285	266	107.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.6	248	107.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.6	248	107.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.07	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			223.8	209	107.07	N. Lake Geneva Area Limitation
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1081.2	1010	107.05	PLPL81/W30 Project and 230 kV study
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1081.2	1010	107.05	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			284.4	266	106.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.7	229	106.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265	248	106.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.9	248	106.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.2	266	106.83	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.8	248	106.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.76	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.7	147	106.63	mitigation available
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.8	147	106.63	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			283.6	266	106.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.6	266	106.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.4	266	106.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.5	223	106.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.5	223	106.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.4	223	106.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.4	223	106.45	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283	266	106.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.8	248	106.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.2	223	106.35	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.8	248	106.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.2	209	106.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.4	248	106.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.5	266	106.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.2	229	106.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.4	248	106.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.2	229	106.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.8	223	106.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.8	223	106.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.4	266	106.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.9	229	106.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.99	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			355	335	105.98	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			698	659	105.91	mitigation available
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			697.9	659	105.9	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.81	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			354.3	335	105.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.7	266	105.52	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			353.5	335	105.51	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.6	248	105.5	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.6	248	105.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.2	248	105.33	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			423.3	402	105.3	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.8	223	105.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.8	223	105.29	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			423.3	402	105.29	mitigation available

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.3	223	105.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.3	223	105.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.4	266	105.05	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.8	229	104.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.7	229	104.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.1	223	104.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.1	223	104.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.2	229	104.44	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			349.9	335	104.43	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			349.8	335	104.42	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.1	223	104.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.9	266	104.1	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			316.5	304	104.1	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			217.6	209	104.09	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			217.6	209	104.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.1	223	104.09	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			316.4	304	104.09	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			348.5	335	104.02	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.9	248	104.01	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.9	248	103.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.7	248	103.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.1	209	103.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.4	223	103.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.4	223	103.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.7	266	103.66	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.2	229	103.56	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.7	304	103.53	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.7	304	103.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.6	248	103.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.5	248	103.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.7	229	103.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.4	223	103.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.4	223	103.33	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.9	209	103.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.1	248	103.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.8	209	103.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.1	248	103.25	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256	248	103.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.9	248	103.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.9	223	103.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.9	223	103.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.9	223	103.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.9	223	103.09	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.3	304	103.05	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.3	304	103.05	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.5	248	103.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.5	248	103.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.2	209	102.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.3	248	102.96	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			142	138	102.9	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			142	138	102.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.1	248	102.85	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255	248	102.82	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			255	248	102.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.4	229	102.81	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			314.3	306	102.72	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			141.6	138	102.62	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.5	248	102.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.7	223	102.58	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.6	304	102.5	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.6	304	102.49	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.5	304	102.47	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.5	304	102.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.1	248	102.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.45	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254	248	102.43	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			141.4	138	102.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254	248	102.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.5	229	102.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.9	248	102.36	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.8	248	102.34	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.7	248	102.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.7	209	102.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.7	266	102.16	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.9	138	102.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.1	248	102.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.7	229	102.07	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253	248	102.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.04	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253	248	102.03	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			253	248	102.01	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.9	248	101.99	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			651.4	639	101.95	Cypress Area 345 kV Uprate study
698090 BOL 138 138 699086 ELK 138 138 1			252.8	248	101.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.9	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			651.2	639	101.9	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.9	209	101.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.87	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			229.2	225	101.86	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			229.1	225	101.84	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			311.6	306	101.82	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			650.6	639	101.82	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			650.2	639	101.75	Cypress Area 345 kV Uprate study
698090 BOL 138 138 699086 ELK 138 138 1			252.3	248	101.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.8	223	101.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.7	223	101.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.1	248	101.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.8	229	101.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.4	209	101.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.4	209	101.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.2	266	101.59	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			340.2	335	101.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.8	248	101.55	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.7	248	101.51	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			228.4	225	101.51	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			228.4	225	101.51	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310.5	306	101.48	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.6	248	101.46	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.3	229	101.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.43	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.3	229	101.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.1	223	101.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.1	223	101.38	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			603	595	101.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226	223	101.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226	223	101.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.6	266	101.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226	223	101.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226	223	101.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.5	266	101.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.9	223	101.3	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			602.7	595	101.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			602.4	595	101.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.9	248	101.17	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			211.4	209	101.16	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.5	223	101.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.12	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.12	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			601.6	595	101.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.7	248	101.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.7	248	101.08	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.6	248	101.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.2	209	101.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.9	209	100.91	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.1	248	100.84	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.9	248	100.77	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			226.7	225	100.74	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			226.7	225	100.73	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			337.4	335	100.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.4	209	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.6	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			307.8	306	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.43	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.2	304	100.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.5	229	100.23	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			596.2	595	100.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.5	266	100.17	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694105 ROR BUS3	138	699141 TOWNLINE	138 1			595.3	595	100.05	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			229.1	229	100.04	N. Lake Geneva Area Limitation

Table E8.1.2: Multiple Event Analysis “P6”, 2028 Summer Peak – Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
693421	STATE LINE	138			0.8232	mitigation available
698518	SPRG VAL	138			0.8233	mitigation available
698518	SPRG VAL	138			0.8332	mitigation available
693421	STATE LINE	138			0.8332	mitigation available
693710	BALSAM 138	138			0.8337	mitigation available
693710	BALSAM 138	138			0.8431	mitigation available
699346	KENOSHA6	138			0.8755	mitigation available
699345	KENOSH45	138			0.8755	mitigation available
699346	KENOSHA6	138			0.8756	mitigation available
699345	KENOSH45	138			0.8756	mitigation available
699362	LAKEVIEW	138			0.8907	mitigation available
699362	LAKEVIEW	138			0.8908	mitigation available
693710	BALSAM 138	138			0.8979	mitigation available
693710	BALSAM 138	138			0.8979	mitigation available

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Table E8.2.1: Multiple Event Analysis “P6”, 2033 Summer Peak - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			334.6	223	150.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			334.6	223	150.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			337	229	147.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			304.5	209	145.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			304.5	209	145.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			318.1	223	142.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			318	223	142.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			315.4	223	141.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			315.4	223	141.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			320.4	229	139.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			310.4	223	139.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			310.4	223	139.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			317.8	229	138.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			287.6	209	137.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			312.8	229	136.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			285	209	136.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			300.7	223	134.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			300.7	223	134.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			299	223	134.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			299	223	134.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			280.1	209	134.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			296.6	223	133.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			296.6	223	133.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			303	229	132.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			301.3	229	131.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			349.4	266	131.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			349.2	266	131.29	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			291.3	223	130.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			291.3	223	130.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			299	229	130.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			347	266	130.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			346.9	266	130.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			345	266	129.69	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			270.9	209	129.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			288.8	223	129.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			288.8	223	129.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			269.1	209	128.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.5	266	128.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.4	266	128.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.4	266	128.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.2	266	128.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			342.2	266	128.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			286.1	223	128.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			286.1	223	128.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			286.1	223	128.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			286	223	128.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			293.7	229	128.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.3	223	127.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.3	223	127.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			266.8	209	127.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.2	223	127.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.2	223	127.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.9	223	127.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.9	223	127.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.9	223	127.3	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.9	223	127.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.7	223	127.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.6	223	127.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.6	223	127.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.6	223	127.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.6	223	127.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.6	223	127.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			291.2	229	127.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.4	223	127.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.4	223	127.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			337.7	266	126.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.9	223	126.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.9	223	126.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.8	223	126.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.8	223	126.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.5	223	126.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.5	223	126.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.5	223	126.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.5	223	126.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			336.9	266	126.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.9	223	126.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.9	223	126.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.6	223	126.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.6	223	126.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			288.4	229	125.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.7	223	125.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.7	223	125.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.2	223	125.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.2	223	125.66	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			287.7	229	125.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.1	223	125.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.1	223	125.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280	223	125.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280	223	125.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.9	223	125.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.9	223	125.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			333.5	266	125.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.6	223	125.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.6	223	125.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.6	229	125.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.9	223	125.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.9	223	125.05	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.3	229	125.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.2	229	124.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286	229	124.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286	229	124.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			261	209	124.86	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.8	229	124.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			309.2	248	124.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			309.2	248	124.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			309	248	124.61	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			309	248	124.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.3	229	124.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.1	229	124.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			331.2	266	124.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.8	229	124.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.3	229	124.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			330.1	266	124.11	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.9	229	123.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			307.2	248	123.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			307.1	248	123.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			258.7	209	123.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			329.1	266	123.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283	229	123.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			328.7	266	123.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.6	229	123.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.4	229	123.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			274.9	223	123.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			274.9	223	123.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			274.9	223	123.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.7	248	123.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			274.9	223	123.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.7	248	123.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.2	229	123.25	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.5	248	123.19	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.5	248	123.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327.6	266	123.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.9	229	123.12	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			992.1	806	123.09	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			992.1	806	123.09	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			327.3	266	123.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327.1	266	122.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.9	266	122.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.2	229	122.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.5	266	122.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			326.1	266	122.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			256.2	209	122.59	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			256.2	209	122.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			303.7	248	122.44	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			303.6	248	122.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.4	266	122.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.4	209	122.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.4	223	122.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.4	223	122.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.4	223	122.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.4	223	122.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.8	266	122.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.8	266	122.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.7	266	122.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.8	266	121.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.6	266	121.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.4	266	121.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.1	209	121.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.2	266	121.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.8	209	121.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.8	209	121.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.7	209	121.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.9	266	121.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.7	209	121.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.7	266	121.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.5	209	121.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.3	266	121.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.2	209	121.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.2	229	121.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.9	266	121.03	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			252.8	209	120.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.7	209	120.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.7	209	120.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.6	266	120.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			252.7	209	120.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.5	223	120.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.5	223	120.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.3	266	120.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.2	223	120.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.2	223	120.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.1	266	120.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321	266	120.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.9	266	120.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.8	266	120.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.9	223	120.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.9	223	120.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.7	266	120.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.8	209	120.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.2	266	120.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.2	266	120.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.4	209	120.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.8	266	120.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.4	266	120.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.4	266	120.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.2	266	120.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274.8	229	119.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.1	266	119.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250.5	209	119.87	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			318.8	266	119.83	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.3	209	119.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.5	266	119.75	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.5	266	119.74	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.2	209	119.73	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.1	209	119.66	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.2	266	119.64	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.2	266	119.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			266.6	223	119.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			266.6	223	119.54	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318	266	119.54	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			249.8	209	119.5	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			249.4	209	119.35	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			317.3	266	119.29	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.9	266	119.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			265.5	223	119.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			265.5	223	119.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.7	266	119.05	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			248.8	209	119.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			316.5	266	118.97	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			248.2	209	118.78	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.74	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.9	266	118.74	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			271.8	229	118.71	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.7	266	118.69	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			271.6	229	118.6	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.4	266	118.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			315.2	266	118.49	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.2	229	118.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.8	266	118.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.7	266	118.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.4	266	118.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.3	266	118.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.4	223	118.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.3	223	118.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.2	223	118.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.2	223	118.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.3	266	117.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262.1	223	117.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262	223	117.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.9	229	117.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.9	229	116.97	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			389.8	335	116.37	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			389.8	335	116.37	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.1	223	116.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.1	223	116.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.9	209	116.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.8	209	116.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.1	223	116.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259	223	116.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.7	266	116.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.7	229	116.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.6	229	115.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.6	223	115.95	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.5	223	115.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.4	229	115.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257	223	115.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257	223	115.24	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			759	659	115.18	mitigation available
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			758.9	659	115.16	mitigation available
693647 BERRYVILLE 138 699409 PARIS B5 138 1			461.8	402	114.88	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.2	223	114.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.1	223	114.86	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			461.7	402	114.85	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			305.5	266	114.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.9	266	114.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.5	223	114.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.4	223	114.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.4	209	114.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			239.2	209	114.46	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.9	209	114.28	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			261.5	229	114.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			261.4	229	114.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.1	223	113.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.9	229	113.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.1	223	113.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.91	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			282.3	248	113.83	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			282.2	248	113.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			282.2	248	113.77	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			282.1	248	113.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.71	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.5	223	113.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.5	223	113.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.4	266	113.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.2	223	113.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.2	223	113.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.9	266	113.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.7	223	113.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			259.4	229	113.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.6	209	113.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.4	223	113.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.4	223	113.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.9	266	113.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.9	266	113.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.3	266	112.91	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			378.2	335	112.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.5	229	112.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.7	223	112.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.7	223	112.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300	266	112.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.4	209	112.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251	223	112.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.8	229	112.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251	223	112.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.4	266	112.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.8	223	112.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.8	223	112.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699410 PARIS WE 138 699982 RAYMOND 138 1			376.3	335	112.34	mitigation available
699410 PARIS WE 138 699982 RAYMOND 138 1			376.3	335	112.33	mitigation available
699060 COR 138 138 699062 MRE 138 138 1			376.3	335	112.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.33	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.5	248	112.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.7	266	112.3	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.5	248	112.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.1	248	112.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.1	248	112.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250	223	112.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250	223	112.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.8	223	112.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.8	223	112.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.5	229	112	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			277.5	248	111.89	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			277.4	248	111.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			277.3	248	111.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.9	229	111.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			277.1	248	111.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.4	209	111.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249	223	111.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249	223	111.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.3	209	111.64	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276.8	248	111.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276.8	248	111.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.5	229	111.59	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			373.8	335	111.57	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			276.3	248	111.43	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.2	266	111.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			276	248	111.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.1	223	111.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.7	229	111.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.1	223	111.23	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
699060 COR 138 138 699062 MRE 138 138 1			372.5	335	111.18	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.7	248	111.16	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.6	248	111.13	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			372.2	335	111.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.1	229	110.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.8	209	110.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.8	209	110.91	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			371.4	335	110.86	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			371.4	335	110.85	mitigation available
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
698090 BOL 138 138 699086 ELK 138 138 1			274.5	248	110.69	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.4	248	110.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.4	229	110.64	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			370.6	335	110.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.2	229	110.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.3	223	110.46	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.3	223	110.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.4	266	110.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.4	266	110.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246	223	110.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.9	223	110.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.3	229	110.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.7	223	110.17	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.4	397	110.17	230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.7	223	110.16	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.3	397	110.15	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.3	397	110.14	230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.2	229	110.12	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.2	397	110.12	230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			272.7	248	109.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.5	266	109.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.8	209	109.95	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			229.8	209	109.94	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			229.8	209	109.94	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.6	248	109.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.4	266	109.91	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			368	335	109.84	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			367.9	335	109.82	mitigation available
699060 COR 138 138 699062 MRE 138 138 1			367.8	335	109.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.4	229	109.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.4	209	109.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.7	266	109.64	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			883.1	806	109.56	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.5	806	109.49	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244.1	223	109.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244.1	223	109.47	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			366.6	335	109.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.1	266	109.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.4	229	109.35	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.4	209	109.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.3	209	109.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.5	266	109.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.5	223	109.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.5	223	109.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.4	223	109.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.4	223	109.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.1	266	109.04	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			438.2	402	109.01	mitigation available
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			438.1	402	108.99	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.8	223	108.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.87	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.8	248	108.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.7	248	108.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.2	223	108.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.2	223	108.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.2	223	108.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.2	223	108.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.7	229	108.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.1	223	108.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.1	223	108.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.9	209	108.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242	223	108.5	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.9	223	108.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.3	229	108.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.8	223	108.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.8	223	108.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268.9	248	108.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268.9	248	108.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.2	266	108.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248	229	108.3	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			872.7	806	108.27	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			288	266	108.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.2	209	108.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.2	223	108.18	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			871.9	806	108.18	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.2	223	108.17	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268.2	248	108.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.11	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			149.2	138	108.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			268	248	108.06	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.9	248	108.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.7	209	108.01	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.7	248	107.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.7	248	107.92	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			868	806	107.69	PLPL81/W30 Project and 230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.2	397	107.6	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.2	397	107.6	230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			224.8	209	107.58	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			867.1	806	107.58	PLPL81/W30 Project and 230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.1	397	107.57	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.1	397	107.57	230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			224.8	209	107.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.7	248	107.55	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.6	248	107.5	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			254.8	237	107.5	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			866.3	806	107.48	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			266.4	248	107.43	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			254.6	237	107.43	Elm Road/Oak Creek Outlet study
698090 BOL 138 138 699086 ELK 138 138 1			266.3	248	107.39	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.5	806	107.38	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.5	806	107.38	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.8	229	107.35	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.2	248	107.35	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.2	248	107.33	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865	806	107.32	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865	806	107.32	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			266.1	248	107.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.29	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864.7	806	107.28	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.1	266	107.18	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			147.8	138	107.14	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			147.8	138	107.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.05	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.1	229	107.05	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.5	806	107.01	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	107	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			327.4	306	106.99	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.99	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			240.7	225	106.98	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			240.7	225	106.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.3	248	106.96	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862	806	106.94	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			223.5	209	106.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.1	248	106.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265	248	106.86	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861.2	806	106.85	PLPL81/W30 Project and 230 kV study
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			357.9	335	106.83	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			357.8	335	106.82	mitigation available
699060 COR 138 138 699062 MRE 138 138 1			357.8	335	106.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.3	209	106.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.6	229	106.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.6	229	106.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.5	229	106.76	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			860.3	806	106.74	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			860.3	806	106.74	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.3	229	106.68	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.9	209	106.67	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.8	147	106.64	mitigation available
698865 BLUMND6 138 699275 BDLT5063T 138 1			156.8	147	106.64	mitigation available
698080 BCH 69 69.0 699070 BCH 138 138 1			147.2	138	106.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.1	229	106.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.7	209	106.53	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			680.5	639	106.49	Cypress Area 345 kV Uprate study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			264.1	248	106.48	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			680.3	639	106.46	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.42	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			146.8	138	106.41	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			857.3	806	106.36	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			857.3	806	106.36	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			282.9	266	106.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.5	229	106.32	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.6	248	106.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.5	248	106.25	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			355.7	335	106.18	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.2	248	106.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.13	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			324.6	306	106.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.1	248	106.09	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			855	806	106.08	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			263	248	106.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.6	209	106.05	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			238.5	225	106.02	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			238.5	225	106	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.99	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			677.3	639	105.99	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			221.4	209	105.96	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			677	639	105.95	Cypress Area 345 kV Uprate study
698090 BOL 138 138 699086 ELK 138 138 1			262.7	248	105.94	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.7	248	105.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.6	248	105.89	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.3	248	105.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.78	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			323.7	306	105.77	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.2	248	105.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.1	248	105.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.9	209	105.69	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.9	209	105.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262	248	105.64	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851.1	806	105.6	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			280.6	266	105.49	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			849.2	806	105.36	PLPL81/W30 Project and 230 kV study
698082 WIB 138 138 699070 BCH 138 138 1			236.9	225	105.27	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			236.8	225	105.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.9	209	105.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.9	248	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.21	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			847.5	806	105.15	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			219.7	209	105.12	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			847.1	806	105.1	PLPL81/W30 Project and 230 kV study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			319.4	304	105.06	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			319.3	304	105.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	105.02	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.2	806	104.99	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.2	806	104.99	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			279.2	266	104.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.3	209	104.92	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.3	806	104.88	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.3	806	104.87	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			320.9	306	104.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.8	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			235.6	225	104.72	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.6	248	104.69	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			235.5	225	104.68	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.5	209	104.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.2	248	104.52	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			317.7	304	104.51	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			317.7	304	104.5	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			842.1	806	104.48	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.8	806	104.44	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.7	806	104.43	PLPL81/W30 Project and 230 kV study
694106 ROR BUS1 138 699062 MRE 138 138 1			390.5	374	104.41	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.5	806	104.41	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841	806	104.35	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840.6	806	104.29	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840.3	806	104.25	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.9	806	104.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.6	806	104.17	PLPL81/W30 Project and 230 kV study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			316.6	304	104.15	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			316.6	304	104.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.1	223	104.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.1	223	104.07	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.8	806	104.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.5	806	104.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.1	806	103.98	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.8	223	103.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.8	223	103.94	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.7	806	103.93	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.7	223	103.92	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.6	806	103.92	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.7	223	103.91	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			388.6	374	103.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.9	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.5	806	103.9	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.4	806	103.9	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.7	806	103.81	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.6	806	103.8	PLPL81/W30 Project and 230 kV study
699060 COR 138 138 699062 MRE 138 138 1			347.7	335	103.79	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			233.5	225	103.77	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			233.5	225	103.76	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.3	806	103.76	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.3	806	103.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.1	806	103.73	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.8	806	103.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.8	806	103.69	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.2	806	103.62	PLPL81/W30 Project and 230 kV study
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			317	306	103.61	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.1	806	103.61	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835	806	103.6	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231	223	103.59	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.9	304	103.59	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.9	304	103.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231	223	103.58	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			834.9	806	103.58	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.56	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			275.4	266	103.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.8	223	103.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.8	223	103.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.2	266	103.47	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.5	304	103.44	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			314.4	304	103.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.1	209	103.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.9	209	103.31	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			386.1	374	103.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230	223	103.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230	223	103.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.3	266	103.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.06	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.04	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.03	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			350.3	340	103.03	230 kV study
698082 WIB 138 138 699070 BCH 138 138 1			231.8	225	103	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			231.7	225	103	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			384.7	374	102.86	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			344.5	335	102.83	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			344.5	335	102.83	mitigation available
699060 COR 138 138 699062 MRE 138 138 1			344.4	335	102.81	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694106 ROR BUS1 138 699062 MRE 138 138 1			384.5	374	102.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.2	223	102.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.2	223	102.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.1	223	102.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.1	223	102.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.7	266	102.5	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			141.4	138	102.5	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			242.8	237	102.45	Elm Road/Oak Creek Outlet study
699392 OAC BUS82-83 138 693667 OAK CK LT88 345 1			640.3	625	102.45	mitigation available
699392 OAC BUS82-83 138 693667 OAK CK LT88 345 1			640.3	625	102.45	mitigation available
699047 ROR 138 138 699141 TOWNLINE 138 2			609.5	595	102.44	N. Lake Geneva Area Limitation
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			344.1	336	102.42	230 kV study
699392 OAC BUS82-83 138 693667 OAK CK LT88 345 1			640.1	625	102.42	mitigation available
699392 OAC BUS82-83 138 693667 OAK CK LT88 345 1			640.1	625	102.42	mitigation available
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			344.1	336	102.41	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			344.1	336	102.41	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			344.1	336	102.41	230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.5	229	102.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.4	266	102.39	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			382.9	374	102.38	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			242.6	237	102.38	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214	209	102.37	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			654	639	102.35	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			654	639	102.34	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			213.9	209	102.33	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.7	806	102.32	PLPL81/W30 Project and 230 kV study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311	304	102.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.8	209	102.28	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.9	304	102.27	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			608.4	595	102.26	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.9	304	102.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.1	229	102.25	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310.9	304	102.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.1	229	102.21	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.8	806	102.21	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			271.9	266	102.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.8	266	102.19	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.6	806	102.18	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			271.8	266	102.17	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.3	806	102.15	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			213.4	209	102.12	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.2	248	102.09	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.8	806	102.09	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.6	806	102.06	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			271.2	266	101.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213	209	101.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.1	266	101.93	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.7	138	101.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.3	229	101.9	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.1	806	101.88	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.9	806	101.84	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.8	806	101.83	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.1	229	101.8	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.4	806	101.79	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			212.6	209	101.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.5	209	101.68	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.68	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.4	806	101.67	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			212.5	209	101.67	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			380.2	374	101.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.1	248	101.65	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819	806	101.61	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			251.9	248	101.57	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			340.3	335	101.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.9	248	101.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.2	209	101.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.2	209	101.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.4	229	101.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.9	266	101.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.44	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			817.3	806	101.41	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.1	223	101.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.1	223	101.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.6	266	101.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.6	266	101.36	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			378.9	374	101.31	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.8	138	101.28	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.2	248	101.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.25	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.7	138	101.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.7	223	101.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.7	223	101.2	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.5	806	101.18	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.3	806	101.15	PLPL81/W30 Project and 230 kV study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.5	304	101.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.6	229	101.13	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.7	806	101.08	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.4	229	101.07	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.1	209	101.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.2	223	101	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.1	209	101	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.1	209	101	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.2	223	100.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.96	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			338.2	335	100.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.92	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			306.7	304	100.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.87	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			337.8	335	100.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.1	266	100.78	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			306.1	304	100.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.55	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			598.2	595	100.54	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699060 COR 138 138 699062 MRE 138 138 1			336.8	335	100.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.4	266	100.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.3	248	100.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.3	266	100.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.45	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			305.3	304	100.44	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249	248	100.4	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			597	595	100.34	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.8	248	100.32	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			808.5	806	100.31	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.3	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.3	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			596.4	595	100.24	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304.7	304	100.24	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			595.7	595	100.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.2	248	100.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.1	209	100.03	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			397.1	397	100.03	230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			806.2	806	100.02	PLPL81/W30 Project and 230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			397	397	100.01	230 kV study
699060 COR 138 138 699062 MRE 138 138 1			335	335	100	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304	304	100	N. Lake Geneva Area Limitation

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Table E8.2.2: Multiple Event Analysis “P6”, 2033 Summer Peak – Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
698518	SPRG VAL	138			0.8353	mitigation available
693421	STATE LINE	138			0.8354	mitigation available
698518	SPRG VAL	138			0.8396	mitigation available
693421	STATE LINE	138			0.8397	mitigation available
693710	BALSAM 138	138			0.8452	mitigation available
693710	BALSAM 138	138			0.8494	mitigation available
699346	KENOSHA6	138			0.8825	mitigation available
699345	KENOSH45	138			0.8825	mitigation available
699346	KENOSHA6	138			0.8825	mitigation available
699345	KENOSH45	138			0.8825	mitigation available
699227	HUBBARD_138	138			0.8833	LTC reverse flow mitigation
698933	HUSTISFD T2	138			0.8857	LTC reverse flow mitigation
698932	HUS TAP 2	138			0.8857	LTC reverse flow mitigation
698230	HUSTISFD T1	138			0.8857	LTC reverse flow mitigation
698931	HUS TAP 1	138			0.8857	LTC reverse flow mitigation
699477	RUBICON	138			0.8881	mitigation available
693710	BALSAM 138	138			0.8962	mitigation available
699362	LAKEVIEW	138			0.8975	mitigation available
699362	LAKEVIEW	138			0.8975	mitigation available
693710	BALSAM 138	138			0.8991	mitigation available

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Table E8.3.1: Multiple Event Analysis “P6”, 2028 Shoulder - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287.6	223	128.95	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287.5	223	128.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287.5	223	128.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287.5	223	128.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			268.3	209	128.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			268.2	209	128.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.9	229	126.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.8	223	120.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.8	223	120.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.1	223	119.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.1	223	119.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.6	209	118	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.1	229	117.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262.9	223	117.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262.9	223	117.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.4	229	117.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.5	209	116.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.3	229	115.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.3	223	114.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.3	223	114.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255	223	114.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255	223	114.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.6	223	114.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.6	223	114.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.89	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			237.1	209	113.44	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			913.7	806	113.36	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			913.7	806	113.36	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			300.7	266	113.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.6	229	112.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.3	266	112.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.3	266	112.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.4	209	112.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.3	229	112.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.9	229	112.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298	266	112.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.8	266	111.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.1	266	111.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.1	223	109.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.1	223	109.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245	223	109.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245	223	109.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.2	266	109.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.8	223	109.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.8	223	109.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.4	223	109.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.4	223	109.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.3	223	109.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.3	223	109.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.88	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.1	223	108.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.1	223	108.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.7	266	108.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.2	266	108.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.7	266	108.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241	223	108.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241	223	108.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.4	229	108.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.3	229	108	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	108	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.7	209	108	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	107.99	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.5	209	107.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.4	223	107.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.4	223	107.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.4	266	107.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286	266	107.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.1	229	107.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.7	223	107.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.7	223	107.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.7	266	107.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.7	266	107.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.6	266	107.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.4	209	107.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.4	209	107.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.6	266	107.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.7	229	107.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.7	229	107.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.2	266	107.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.8	223	107.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.8	223	107.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.8	223	107.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.8	223	107.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.8	266	107.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.3	266	106.87	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			223.3	209	106.86	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			223.3	209	106.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.2	223	106.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.2	223	106.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.1	266	106.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.1	223	106.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.1	223	106.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.1	223	106.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.5	229	106.75	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.1	223	106.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.9	223	106.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.8	223	106.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.8	223	106.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.8	223	106.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.6	266	106.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.33	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.2	209	106.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.31	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.2	209	106.31	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.1	209	106.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.28	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.1	209	106.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.7	266	106.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.2	229	106.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.2	266	106.1	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			282.2	266	106.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.7	209	106.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.4	223	105.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.4	223	105.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.7	229	105.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.8	266	105.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.4	209	105.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.8	266	105.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.1	229	105.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221	209	105.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242	229	105.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.7	266	105.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.6	266	105.48	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.4	209	105.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.3	209	105.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.2	266	105.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.1	229	105.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.1	229	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.9	209	105.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.21	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			219.9	209	105.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.5	229	105.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.4	229	105	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	104.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.4	229	104.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.1	223	104.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234	223	104.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234	223	104.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234	223	104.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.1	266	104.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.2	229	104.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.2	229	104.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.8	209	104.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.5	209	104.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.4	209	104.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.3	209	104.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.2	209	104.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.1	209	104.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.1	209	104.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.5	266	104.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.29	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.5	209	104.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.5	209	104.06	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.8	248	103.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.8	248	103.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.3	266	103.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.77	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.5	248	103.44	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.5	248	103.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256	248	103.25	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256	248	103.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.4	229	103.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.3	229	103.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.2	209	102.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.2	209	102.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.4	248	102.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			254.4	248	102.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.5	223	102.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.5	223	102.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.4	223	102.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.4	223	102.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.3	223	102.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.3	223	102.37	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			341.8	335	102.04	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			341.8	335	102.02	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			271.2	266	101.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.6	248	101.87	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			252.6	248	101.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.9	223	101.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.46	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			647.6	639	101.34	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			647.1	639	101.27	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.6	223	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.3	223	101.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.3	223	101.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.9	229	100.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.8	229	100.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.6	229	100.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.8	223	100.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.5	209	100.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.5	266	100.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.5	266	100.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.2	209	100.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.2	229	100.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.2	266	100.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.2	266	100.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.1	209	100.05	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			266	266	100.01	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			209	209	100	N. Lake Geneva Area Limitation

Table E8.3.2: Multiple Event Analysis “P6”, 2028 Shoulder - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E8.4.1: Multiple Event Analysis “P6”, 2028 Light Load - Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1111.8	806	137.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1111.8	806	137.94	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1			308.8	246	125.52	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			308.7	246	125.47	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			295.3	246	120.05	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			295.2	246	120	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			290.2	246	117.97	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			290.1	246	117.94	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			905.1	806	112.3	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			904.5	806	112.22	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			904.4	806	112.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			904.4	806	112.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			902.2	806	111.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			901.6	806	111.86	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			901.1	806	111.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			900.6	806	111.73	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			899.1	806	111.55	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			898.9	806	111.52	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			898.6	806	111.49	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			898.3	806	111.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			890.2	806	110.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			885.7	806	109.89	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.7	806	109.51	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			871.8	806	108.16	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			871.8	806	108.16	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			870.4	806	107.99	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			870.1	806	107.96	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			869.7	806	107.91	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			869.7	806	107.9	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			868.2	806	107.72	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			866.1	806	107.46	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.9	806	107.43	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			236.4	220	107.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.3	220	107.43	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.7	806	107.4	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864.1	806	107.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.5	806	107.01	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861.5	806	106.89	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861.3	806	106.86	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861	806	106.83	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861	806	106.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861	806	106.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.6	806	106.64	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.6	806	106.64	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			858.7	806	106.54	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			858.6	806	106.53	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			857.8	806	106.42	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			856.6	806	106.28	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			856.5	806	106.27	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.3	234	105.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.2	234	105.23	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.2	806	104.99	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			846.1	806	104.97	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.9	806	104.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.8	806	104.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845	806	104.83	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.8	806	104.81	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.7	806	104.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.7	806	104.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.6	806	104.79	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.1	806	104.73	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			843.9	806	104.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.8	806	104.44	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841.2	806	104.37	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			841	806	104.34	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.2	806	104.11	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.6	239	104	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			834.4	806	103.53	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.9	806	103.33	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.8	806	103.32	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			829.1	806	102.87	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			829.1	806	102.87	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828.9	806	102.84	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.1	806	101.75	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1			247.5	246	100.61	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1			1014.1	1010	100.41	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1			1014.1	1010	100.41	PLPL81/W30 Project and 230 kV study

Table E8.4.2: Multiple Event Analysis “P6”, 2028 Light Load - Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E8.5.1: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”- Alternative 1, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			303.4	223	136.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			303.4	223	136.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			303.4	223	136.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			303.4	223	136.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			284	209	135.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			284	209	135.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			305.8	229	133.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.4	223	126.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.4	223	126.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.7	223	125.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.6	223	125.4	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			261.8	209	125.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			261.8	209	125.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			260.1	209	124.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.5	223	124	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.5	223	123.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.7	229	123.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282	229	123.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			256.9	209	122.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.5	266	121.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324	266	121.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324	266	121.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			278.8	229	121.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322	266	121.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.7	266	120.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.3	223	120.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.3	223	120.74	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.5	223	120.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.4	223	120.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.9	266	120.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.9	266	120.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.4	266	120.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.6	223	119.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.6	223	119.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250	209	119.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.1	266	119.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.1	209	119.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.3	209	118.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.6	229	118.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.8	229	118.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.9	229	117.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.4	266	117.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.2	266	117.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313	266	117.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.4	266	117.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311	266	116.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.5	266	116.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.5	266	116.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.5	266	116.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.5	266	116.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.2	266	116.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.1	266	116.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.9	266	116.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.7	266	116.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			308.6	266	116.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.1	266	115.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.1	266	115.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.6	266	115.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.1	266	115.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.1	266	115.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.9	266	115.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			257.1	223	115.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.7	266	115.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			257.1	223	115.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.2	266	115.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.2	266	115.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.4	223	114.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.8	266	114.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.4	223	114.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.6	266	114.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.1	266	114.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			255.8	223	114.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			255.8	223	114.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305	266	114.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305	266	114.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.9	266	114.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.9	266	114.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.7	266	114.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.4	266	114.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.9	266	114.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.6	266	114.12	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			303.5	266	114.1	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			303.4	266	114.08	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			303.4	266	114.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			303.3	266	114.01	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302.9	266	113.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			253.8	223	113.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			253.8	223	113.8	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302.7	266	113.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302.5	266	113.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			253.5	223	113.7	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			237.6	209	113.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			253.5	223	113.69	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302.3	266	113.64	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			302	266	113.52	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.9	266	113.49	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.8	266	113.47	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.9	209	113.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			301.5	266	113.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			259.4	229	113.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			252.6	223	113.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			252.3	223	113.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			252.2	223	113.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			252.2	223	113.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			252.2	223	113.09	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			300.8	266	113.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			252.1	223	113.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			252.1	223	113.05	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			236.2	209	113	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.7	229	112.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.8	223	112.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.8	223	112.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300	266	112.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.1	229	112.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.3	209	112.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.9	223	112.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.8	223	112.48	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			376.8	335	112.48	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			376.7	335	112.46	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.4	223	112.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.3	223	112.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.1	229	112.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.2	223	112.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.2	223	112.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250	223	112.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250	223	112.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250	223	112.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250	223	112.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.9	223	112.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.9	223	112.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.9	223	112.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.2	209	112.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.9	223	112.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.9	223	112.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.9	223	112.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.9	223	112.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.8	223	112.04	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.7	266	111.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.7	266	111.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.6	223	111.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.5	223	111.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.1	229	111.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.4	223	111.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.4	223	111.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.9	229	111.74	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			233.5	209	111.71	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			233.5	209	111.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.2	209	111.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.2	209	111.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.1	209	111.53	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			711.6	639	111.36	Cypress Area 345 kV Uprate study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.35	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			711.2	639	111.29	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			232.5	209	111.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.6	229	111.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.5	229	111.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.6	248	111.13	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.3	209	111.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			275.6	248	111.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.4	229	111.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.7	223	111.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.7	223	111.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.6	223	111.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.6	223	111.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.1	229	110.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.3	209	110.67	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.2	229	110.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.1	248	110.53	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.1	248	110.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231	209	110.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231	209	110.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.9	209	110.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.9	209	110.48	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.8	209	110.44	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273.8	248	110.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273.7	248	110.38	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.7	209	110.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.7	229	110.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.4	209	110.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.3	209	110.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.3	229	110.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.3	229	110.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.3	229	110.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.2	229	110.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.2	229	110.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.2	229	110.13	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.1	209	110.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.9	209	110.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.9	229	110	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			229.8	209	109.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.2	223	109.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.2	223	109.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.2	223	109.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.2	223	109.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.8	209	109.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.8	209	109.93	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.2	248	109.75	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.1	248	109.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.7	209	109.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.6	209	109.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.4	266	109.18	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.7	248	109.17	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.7	248	109.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250	229	109.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250	229	109.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.3	266	109.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.4	248	109.01	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.3	248	109	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.9	223	108.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.9	223	108.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.8	223	108.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.5	266	108.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.5	266	108.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.5	266	108.48	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			692.5	639	108.37	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			692	639	108.29	Cypress Area 345 kV Uprate study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			226.2	209	108.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.2	209	108.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.8	266	108.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.5	229	108.08	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.5	229	108.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.4	266	108.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.9	266	107.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.1	266	107.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.7	223	107.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.7	223	107.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.3	266	107.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.9	223	107.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285	266	107.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.9	209	107.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.9	223	107.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.9	209	107.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.9	266	107.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.2	229	107.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.7	266	107.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.6	266	106.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.5	223	106.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.5	223	106.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.2	266	106.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			284.1	266	106.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.7	266	106.67	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			356.8	335	106.52	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			356.8	335	106.52	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			356.8	335	106.52	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.8	223	106.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.8	223	106.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.7	223	106.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.7	223	106.15	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			678.2	639	106.14	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			677.6	639	106.03	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242	229	105.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.4	223	105.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.7	229	105.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.4	223	105.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.2	209	105.38	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			673.3	639	105.37	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			673.2	639	105.36	Cypress Area 345 kV Uprate study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.3	229	105.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			240.1	228	105.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			240.1	228	105.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220	209	105.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220	209	105.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			240.9	229	105.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			279.6	266	105.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.5	209	105.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234	223	104.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234	223	104.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234	223	104.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.9	223	104.91	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.1	209	104.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.8	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			349.9	335	104.45	mitigation available
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.2	229	104.44	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			349.8	335	104.43	mitigation available
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239	229	104.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.6	223	104.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.6	223	104.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.6	223	104.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.6	223	104.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.5	223	104.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.5	223	104.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.5	209	104.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.1	223	104.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.1	223	104.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232	223	104.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232	223	104.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.4	209	104.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.7	229	103.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			236.5	228	103.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			236.5	228	103.73	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			216.6	209	103.62	N. Lake Geneva Area Limitation
699268 BUTLER 138 699331 GRANVL 4 138 2			347	335	103.59	mitigation available
699268 BUTLER 138 699331 GRANVL 4 138 2			347	335	103.59	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			274.9	266	103.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.2	223	103.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.2	223	103.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.4	229	103.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.3	229	103.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.8	223	103.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.8	223	103.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.79	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			656.8	639	102.78	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			656.6	639	102.75	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.6	209	102.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.6	209	102.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.9	223	102.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.9	223	102.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.8	223	102.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.9	229	102.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.7	223	102.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.9	229	102.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.4	266	102.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.4	229	102.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.32	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.7	209	102.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.7	209	102.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.4	209	102.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			232.7	228	102.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			232.6	228	102.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271	266	101.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.8	266	101.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.8	209	101.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.7	209	101.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.8	223	101.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.8	223	101.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.7	223	101.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.6	223	101.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.6	223	101.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.6	223	101.61	N. Lake Geneva Area Limitation
693580 CYPRESS 345 694018 FORST JT B5 345 1			668.3	659	101.41	Cypress Area 345 kV Uprate study
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.9	209	101.39	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.9	209	101.39	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.38	N. Lake Geneva Area Limitation
693580 CYPRESS 345 694018 FORST JT B5 345 1			667.8	659	101.34	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.9	223	101.31	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.9	248	101.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.4	209	101.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.4	209	101.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.2	229	100.97	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.1	229	100.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225	223	100.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.1	229	100.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225	223	100.9	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			600.2	595	100.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.8	223	100.79	N. Lake Geneva Area Limitation
694105 ROR BUS3 138 699141 TOWNLINE 138 1			599.5	595	100.75	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.9	248	100.75	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.9	248	100.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.5	209	100.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.5	209	100.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.8	209	100.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.6	223	100.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.6	209	100.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.6	223	100.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.6	223	100.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.6	223	100.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.5	223	100.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.4	223	100.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.2	209	100.12	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			595.7	595	100.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.1	229	100.05	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.1	248	100.04	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.1	248	100.03	N. Lake Geneva Area Limitation

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Table E8.5.2: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”– Alternative 1, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
698518	SPRG VAL	138			0.8804	mitigation available
693421	STATE LINE	138			0.8826	mitigation available
693710	BALSAM 138	138			0.8828	mitigation available

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Table E9.1.1: System Intact, 2028 Summer Peak – Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E9.1.2: System Intact, 2028 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E9.2.1: System Intact, 2033 Summer Peak - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1488	109.07	Elm Road/Oak Creek Outlet study

Table E9.2.2: System Intact, 2033 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E9.3.1: System Intact, 2028 Shoulder - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E9.3.2: System Intact, 2028 Shoulder - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Table E9.4.1: System Intact, 2028 Light Load - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		-	1554	106.44	Elm Road/Oak Creek Outlet study

Table E9.4.2: System Intact, 2028 Light Load - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E9.5.1: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
					No results met the criteria threshold

Table E9.5.2: System Intact, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E10.1.1: Single Event Analysis, 2028 Summer Peak - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		289.5	246	117.68	N. Lake Geneva Area Limitation
698095 SUN 138 699963 JOHNSTOWN 138 1		289.5	246	117.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		260.4	223	116.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		260.4	223	116.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		260.3	223	116.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		260.3	223	116.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		259.3	223	116.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		259.3	223	116.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		258.4	223	115.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		258.4	223	115.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		262.7	229	114.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		262.7	229	114.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		261.6	229	114.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		260.7	229	113.85	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		275.6	246	112.02	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		275.5	246	112.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		295.6	266	111.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.9	266	110.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.9	266	110.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		230.5	209	110.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		230.5	209	110.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.2	266	110.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		229.4	209	109.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		228.5	209	109.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.1	266	108.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.1	266	108.29	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		288.1	266	108.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.1	266	108.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		267.5	248	107.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.3	266	107.62	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		266.6	248	107.5	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		266.6	248	107.5	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		266.5	248	107.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.6	266	107.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.6	266	107.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.5	266	107.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.4	266	107.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		284.3	266	106.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		282.2	266	106.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		262.6	248	105.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281	266	105.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.9	266	105.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.9	266	105.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		261.7	248	105.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278.8	266	104.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278.8	266	104.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		278.3	266	104.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		277.9	266	104.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		276.6	266	103.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		276.6	266	103.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		275.8	266	103.7	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		257.2	248	103.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		275.1	266	103.43	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		272.5	266	102.46	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		645.3	639	100.98	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		247.6	246	100.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		247.5	246	100.61	N. Lake Geneva Area Limitation

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Table E10.1.2: Single Event Analysis, 2028 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8579	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.858	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.858	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.858	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8581	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8581	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8581	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8581	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8581	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8581	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8581	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8581	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8581	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8581	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8581	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8581	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8583	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8584	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8584	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8584	LTC reverse flow mitigation

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Table E10.2.1: Single Event Analysis, 2033 Summer Peak - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698857 OC CRK8 230 693694 OAK CK LT884 345 1		420.2	340	123.58	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		420.2	340	123.58	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		420.2	340	123.58	230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		989.5	806	122.76	PLPL81/W30 Project and 230 kV study
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		300.4	246	122.12	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		300.4	246	122.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		271.6	223	121.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		271.6	223	121.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		271.6	223	121.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		271.6	223	121.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		270.6	223	121.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		270.6	223	121.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		269.7	223	120.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		269.6	223	120.92	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		274	229	119.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		274	229	119.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		272.9	229	119.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		272	229	118.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		313.5	266	117.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		311.8	266	117.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		311.8	266	117.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		311.1	266	116.95	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		286.5	246	116.45	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		286.4	246	116.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		241.6	209	115.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		241.6	209	115.6	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1		240.6	209	115.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		239.7	209	114.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		304.2	266	114.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		304.2	266	114.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		304.2	266	114.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		304.2	266	114.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.9	266	114.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.2	266	113.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		303.1	266	113.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.7	266	113.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		301.7	266	113.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		300.5	266	112.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		278.9	248	112.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.6	266	112.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.5	266	112.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		278.3	248	112.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		298.3	266	112.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		278	248	112.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		278	248	112.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297	266	111.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.2	266	111.35	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1		377	340	110.88	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		377	340	110.88	230 kV study
699085 NLG 138 138 699086 ELK 138 138 1		294.9	266	110.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.9	266	110.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.2	266	110.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		294.2	266	110.58	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		273.9	248	110.46	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		293.5	266	110.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.4	266	110.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		293.2	266	110.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		273.1	248	110.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		292.7	266	110.05	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1		260.3	237	109.83	Elm Road/Oak Creek Outlet study
698857 OC CRK8 230 693694 OAK CK LT884 345 1		373.3	340	109.79	230 kV study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1242.5	1146	108.42	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1242.4	1146	108.41	Elm Road/Oak Creek Outlet study
698090 BOL 138 138 699086 ELK 138 138 1		268.8	248	108.4	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1242.2	1146	108.39	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1242.1	1146	108.39	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1241.8	1146	108.36	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1241.8	1146	108.36	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1240	1146	108.2	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1239.9	1146	108.2	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1239.9	1146	108.2	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1239.8	1146	108.18	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		287.8	266	108.18	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1237.1	1146	107.95	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1234.1	1146	107.69	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		285.4	266	107.31	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1225.3	1146	106.92	Elm Road/Oak Creek Outlet study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		238.4	223	106.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		238.4	223	106.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		238.4	223	106.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		238.4	223	106.89	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1224	1146	106.81	Elm Road/Oak Creek Outlet study

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1223.7	1146	106.78	Elm Road/Oak Creek Outlet study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		237.7	223	106.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		237.7	223	106.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		237.4	223	106.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		237.4	223	106.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		260.7	246	105.99	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1214.1	1146	105.94	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1214.1	1146	105.94	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		260.2	246	105.76	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1210.3	1146	105.61	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1210.2	1146	105.6	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		259.5	246	105.51	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		673.3	639	105.37	Cypress area 345 kV uprate study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		240.7	229	105.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		240.7	229	105.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		234.3	223	105.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		234.3	223	105.07	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1202.3	1146	104.92	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1202	1146	104.89	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1202	1146	104.89	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1201.8	1146	104.87	Elm Road/Oak Creek Outlet study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		240.1	229	104.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		240.1	229	104.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		239.8	229	104.71	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		843.6	806	104.66	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		842.3	806	104.51	PLPL81/W30 Project and 230 kV study

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699283 CONCRD 4 138 699293 COONEY 138 1		334.8	321	104.31	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		258.5	248	104.22	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		334.2	321	104.1	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1		246.5	237	104.03	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		276	266	103.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		257.1	248	103.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		236.7	229	103.34	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1181.4	1146	103.09	Elm Road/Oak Creek Outlet study
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1527.3	1488	102.64	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1		251.9	246	102.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		253.8	248	102.33	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		253.8	248	102.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		251.4	246	102.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.6	266	102.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		253	248	102	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.5	246	101.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.4	246	101.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.3	246	101.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.2	246	101.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.1	246	101.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		250.1	246	101.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		252	248	101.61	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		325.4	321	101.36	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		251.2	248	101.28	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		325.1	321	101.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		251	248	101.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		250.8	248	101.15	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		324.5	321	101.09	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1		250.7	248	101.08	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1		250.7	248	101.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.6	266	100.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.6	266	100.97	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		323.5	321	100.78	N. Lake Geneva Area Limitation
699283 CONCRD 4 138 699293 COONEY 138 1		323.3	321	100.7	N. Lake Geneva Area Limitation
694120 RACINE BUS6 345 699367 ELM ROAD 345 1		1153.5	1146	100.66	Elm Road/Oak Creek Outlet study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.5	175	100.28	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		808.2	806	100.27	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.4	175	100.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.3	175	100.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.3	175	100.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.3	175	100.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		175.1	175	100.08	N. Lake Geneva Area Limitation

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Table E10.2.2: Single Event Analysis, 2033 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8573	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8573	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8573	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8573	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8574	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8574	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8574	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8574	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8574	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8574	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8575	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8575	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8575	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8575	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8575	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8575	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8576	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8577	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8577	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8577	LTC reverse flow mitigation

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Table E10.3.1: Single Event Analysis, 2028 Shoulder - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		911.1	806	113.04	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1		278.5	266	104.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		277.4	266	104.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		277.4	266	104.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		276.7	266	104.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		231.4	223	103.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		231.4	223	103.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		231.3	223	103.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		231.3	223	103.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		230.7	223	103.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		230.7	223	103.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		230.1	223	103.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		230.1	223	103.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		233.7	229	102.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		233.7	229	102.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		271.1	266	101.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		233	229	101.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.4	266	101.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		270.3	266	101.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		232.4	229	101.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		212	209	101.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		212	209	101.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		211.4	209	101.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.03	N. Lake Geneva Area Limitation

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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		268.8	266	101.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		210.8	209	100.85	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		643.6	639	100.72	Cypress Area 345 kV Uprate study
698095 SUN 138 138 699963 JOHNSTOWN 138 1		247.8	246	100.71	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		247.8	246	100.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.5	266	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.4	266	100.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		267.4	266	100.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.5	266	100.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.5	266	100.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.3	266	100.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		266.3	266	100.12	N. Lake Geneva Area Limitation

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Table E10.3.2: Single Event Analysis, 2028 Shoulder - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8683	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8683	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8683	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8683	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8683	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8683	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8683	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8683	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8683	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8683	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8683	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8683	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8683	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8683	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8683	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8683	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8684	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8684	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8684	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8685	LTC reverse flow mitigation

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Table E10.4.1: Single Event Analysis, 2028 Light Load - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		1116.9	806	138.58	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		898.3	806	111.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		887.2	806	110.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		851	806	105.58	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		845.2	806	104.86	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2		845.2	806	104.86	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1		1018.8	1010	100.87	PLPL81/W30 Project and 230 kV study

Table E10.4.2: Single Event Analysis, 2028 Light Load - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
					No results met the criteria threshold

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Table E10.5.1: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Thermal limitations

Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1		298.4	266	112.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.3	266	111.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		297.3	266	111.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		296.6	266	111.5	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1		706.9	639	110.63	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		291	266	109.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291	266	109.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291	266	109.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		291	266	109.39	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1		268.1	246	108.98	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1		268.1	246	108.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		289.6	266	108.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		242.6	223	108.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		242.6	223	108.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		242.5	223	108.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		242.5	223	108.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.8	266	108.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.8	266	108.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.8	266	108.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.6	266	108.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.6	266	108.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.8	223	108.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.8	223	108.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288.1	266	108.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		288	266	108.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1		241.3	223	108.21	N. Lake Geneva Area Limitation

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Appendix D, Exhibit 1
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Monitored Facility	Contingency Name	Cont Flow (MVA)	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1		241.3	223	108.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		287.2	266	107.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		286.3	266	107.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.2	266	107.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285.1	266	107.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		285	266	107.16	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		244.9	229	106.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		244.9	229	106.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		223.1	209	106.74	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		223.1	209	106.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		244.1	229	106.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		222.4	209	106.39	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1		243.6	229	106.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1		221.8	209	106.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		282.3	266	106.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		282.3	266	106.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.8	266	105.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		281.4	266	105.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		277	266	104.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		276.8	266	104.05	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1		254.5	246	103.47	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z		254.5	246	103.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		273.4	266	102.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1		252	246	102.42	N. Lake Geneva Area Limitation
693580 CYPRESS 345 694018 FORST JT B5 345 1		665.1	659	100.93	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1		247.8	246	100.75	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E10.5.2: Single Event Analysis, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	Contingency Name	Base Voltage (p.u.)	Comment
698933	HUSTISFD T2	138		0.8681	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8681	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8681	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8681	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8681	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8681	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8681	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8681	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8681	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8681	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8681	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8681	LTC reverse flow mitigation
698933	HUSTISFD T2	138		0.8681	LTC reverse flow mitigation
698230	HUSTISFD T1	138		0.8681	LTC reverse flow mitigation
698931	HUS TAP 1	138		0.8681	LTC reverse flow mitigation
698932	HUS TAP 2	138		0.8681	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8683	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8683	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8683	LTC reverse flow mitigation
699227	HUBBARD_138	138		0.8683	LTC reverse flow mitigation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E11.1.1: Multiple Event Analysis “P3”, 2028 Summer Peak - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			325	266	122.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.1	223	121.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271	223	121.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271	223	121.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271	223	121.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.4	266	121.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			273.4	229	119.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			273.4	229	119.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.1	266	116.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310	266	116.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.6	266	115.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.5	266	115.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			241	209	115.33	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			241	209	115.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.5	266	114.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.5	266	114.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.4	223	114.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.3	223	114.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.1	223	113.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.1	223	113.94	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			346.9	306	113.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.7	229	112.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.4	229	111.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.8	209	111.88	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.7	209	111.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.7	209	111.81	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			233.6	209	111.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.5	223	111.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.3	223	111.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.3	223	111.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.8	266	110.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.5	266	110.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.5	266	110.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.3	266	110.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.3	266	110.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.3	266	110.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.2	266	110.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.6	223	110.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.6	223	110.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.5	223	110.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.4	266	110.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.4	266	109.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.2	266	109.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.82	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292	266	109.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.7	266	109.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.6	266	109.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.8	229	109.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.7	229	109.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.7	266	109.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249	229	108.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.68	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			331.1	306	108.2	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			346.9	321	108.05	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.3	209	107.31	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			328.2	306	107.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.5	223	106.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.5	223	106.48	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			323.6	306	105.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.9	223	104.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.8	223	104.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.8	229	104.72	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			218.8	209	104.69	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.6	209	104.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.8	266	104.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217	209	103.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.2	229	103.14	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			331.1	321	103.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.5	248	103.03	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.5	248	103.02	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			314.5	306	102.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.6	248	102.27	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			328.2	321	102.24	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			312.5	306	102.13	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			312	306	101.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.87	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.5	248	101.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			252.4	248	101.78	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310.7	306	101.53	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310.6	306	101.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.5	266	101.3	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.5	248	101.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.83	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698095 SUN 138 138 699963 JOHNSTOWN 138 1			323.6	321	100.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.3	223	100.59	N. Lake Geneva Area Limitation
699523 WHTWTR3 138 699950 LKHD TP 138 1			332.9	331	100.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.3	223	100.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.2	223	100.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.3	266	100.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.6	229	100.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.5	229	100.23	N. Lake Geneva Area Limitation

Table E11.1.2: Multiple Event Analysis “P3”, 2028 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E11.2.1: Multiple Event Analysis “P3”, 2033 Summer Peak - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			341.2	266	128.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			338.7	266	127.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.1	223	126.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.1	223	126.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.7	223	126.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.6	223	126.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284.4	229	124.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			284	229	124.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.6	223	123.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.6	223	123.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.3	223	123.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.3	223	123.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			325.6	266	122.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.8	266	122.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			323.1	266	121.48	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			278	229	121.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			277.7	229	121.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			322.4	266	121.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.7	266	120.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.9	209	120.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			320.1	266	120.33	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			251.5	209	120.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.7	223	119.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.7	223	119.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.4	223	119.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.4	223	119.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.9	223	118.33	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.9	223	118.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.8	223	118.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.8	223	118.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.8	266	117.98	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			360.8	306	117.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.3	266	117.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.5	209	117.47	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312	266	117.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.8	266	117.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245	209	117.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			244.8	209	117.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			244.8	209	117.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			244.8	209	117.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.1	229	117.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.3	266	117.04	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.8	229	116.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.9	266	116.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.8	266	116.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.8	266	116.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.7	266	116.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.3	266	116.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.3	266	116.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.2	266	116.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.2	266	116.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310.2	266	116.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			310	266	116.56	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.9	223	116.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.9	223	116.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.8	223	116.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.8	223	116.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.9	266	116.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.8	266	116.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.8	266	116.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.5	266	116.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.3	266	116.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.2	266	116.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			266.2	229	116.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.2	266	116.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			266.1	229	116.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.1	266	116.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.5	266	115.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.3	266	115.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.2	266	115.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.2	266	115.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258.1	223	115.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258.1	223	115.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			258	223	115.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.8	266	115.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			258	223	115.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.7	266	115.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.7	266	115.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.7	266	115.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			306.7	266	115.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.2	229	114.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.2	229	114.48	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.5	229	113.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			260.4	229	113.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.7	209	112.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.4	209	112.65	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			360.8	321	112.41	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			343.4	306	112.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.9	209	111.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.9	209	111.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.1	223	111.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249	223	111.68	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			340.5	306	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.6	266	111.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.5	223	110.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.5	223	110.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230	209	110.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.9	209	110.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.6	266	109.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.5	266	109.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.4	266	109.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.4	266	109.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.4	229	109.78	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			335.9	306	109.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292	266	109.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.3	209	109.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.2	209	109.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290	266	109.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.9	266	108.98	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.2	223	108.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.2	223	108.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.9	229	108.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286	266	107.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.9	266	107.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.7	223	107.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.7	223	107.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.7	223	107.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.6	223	107.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.6	223	107.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.6	223	107.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.7	266	107.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266	248	107.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.6	248	107.08	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			343.4	321	106.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.9	229	106.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.6	229	106.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.7	248	106.73	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			326.4	306	106.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.3	266	106.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.43	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			282.9	266	106.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.7	266	106.3	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			324.7	306	106.12	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.2	266	106.11	N. Lake Geneva Area Limitation
698095 SUN 138	138	699963 JOHNSTOWN	138 1			340.5	321	106.07	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			324.4	306	106.01	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			262.9	248	106	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.9	266	105.98	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.8	266	105.93	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.6	266	105.86	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			262.4	248	105.82	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.4	266	105.81	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.4	266	105.77	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.2	229	105.76	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.3	266	105.74	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242	229	105.69	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			323.4	306	105.68	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242	229	105.68	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			241.9	229	105.65	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			323	306	105.56	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			261.6	248	105.47	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.4	266	105.39	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.2	266	105.33	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.3	266	104.98	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			219.4	209	104.96	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			278.9	266	104.85	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			278.8	266	104.8	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699523 WHTWTR3 138 699950 LKHD TP 138 1			346.8	331	104.79	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			335.9	321	104.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.1	266	104.55	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.2	248	104.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.9	266	104.48	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.9	248	104.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.82	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			317.6	306	103.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.6	266	103.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.6	266	103.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.4	266	103.54	N. Lake Geneva Area Limitation
698882 WHTWTR4 138 699523 WHTWTR3 138 Z			346.8	335	103.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.9	209	103.29	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			316.1	306	103.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.1	248	103.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.4	266	103.17	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.8	248	103.13	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			315.4	306	103.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.9	266	102.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.85	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			314.5	306	102.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.2	266	102.7	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			272.8	266	102.55	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			313.7	306	102.52	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			313.7	306	102.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.7	266	102.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.6	266	102.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.4	266	102.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.1	266	102.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.9	266	102.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.9	266	102.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.7	266	102.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.12	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			312.3	306	102.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.2	266	101.96	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			311.9	306	101.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.1	266	101.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.1	266	101.92	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			311.7	306	101.85	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			311.6	306	101.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.7	209	101.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.7	266	101.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.7	266	101.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.7	266	101.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.8	223	101.71	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.8	223	101.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.7	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			326.4	321	101.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.7	223	101.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.7	223	101.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.4	209	101.65	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310.8	306	101.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.2	266	101.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270	266	101.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.6	266	101.35	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310.1	306	101.32	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310	306	101.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.21	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309.7	306	101.2	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			324.7	321	101.16	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309.4	306	101.1	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			324.4	321	101.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.8	266	101.04	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309.2	306	101.03	N. Lake Geneva Area Limitation

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Monitored Element					First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138	1			268.7	266	101.01	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268.6	266	100.99	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268.6	266	100.98	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268.2	266	100.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268.2	266	100.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268.2	266	100.81	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			249.9	248	100.76	N. Lake Geneva Area Limitation
698095 SUN 138	138	699963 JOHNSTOWN	138	1			323.4	321	100.74	N. Lake Geneva Area Limitation
698095 SUN 138	138	699963 JOHNSTOWN	138	1			323	321	100.63	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4	345	694009 EDG BUS2	345	1			663.1	659	100.62	mitigation available
694007 CEDRSAUK B4	345	694009 EDG BUS2	345	1			663.1	659	100.62	mitigation available
698879 SGR CK4	138	699360 NLK GV T	138	1			210.2	209	100.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			267.3	266	100.5	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			210	209	100.49	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			210	209	100.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224	223	100.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224	223	100.46	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			209.9	209	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224	223	100.43	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			267.1	266	100.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			223.9	223	100.42	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4	345	694009 EDG BUS2	345	1			661	659	100.3	mitigation available
694007 CEDRSAUK B4	345	694009 EDG BUS2	345	1			661	659	100.3	mitigation available
699085 NLG 138	138	699086 ELK 138	138	1			266.8	266	100.3	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138	1			304.8	304	100.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			266.7	266	100.25	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138	1			306.6	306	100.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			266.5	266	100.17	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			266.4	266	100.15	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.4	266	100.13	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.3	248	100.12	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			229.1	229	100.06	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304.2	304	100.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.1	266	100.05	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			229.1	229	100.03	N. Lake Geneva Area Limitation

Table E11.2.2: Multiple Event Analysis “P3”, 2033 Summer Peak - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E11.3.1: Multiple Event Analysis “P3”, 2028 Shoulder - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			299.4	266	112.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.6	266	108.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.2	266	108.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.8	223	108.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.7	223	108.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.5	223	108.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.5	223	108.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.2	266	107.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.1	266	107.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.9	266	107.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.7	266	107.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.1	229	106.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.9	229	106.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.3	209	106.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.1	209	106.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.3	266	103.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.2	266	103.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.1	266	103.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.1	266	103.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.5	266	103.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.8	266	102.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.7	266	102.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.33	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			272.2	266	102.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			272.2	266	102.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			272.1	266	102.3	N. Lake Geneva Area Limitation

Table E11.3.2: Multiple Event Analysis “P3”, 2028 Shoulder - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E11.4.1: Multiple Event Analysis “P3”, 2028 Light Load - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.6	806	104.17	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.8	806	103.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.2	806	103.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.6	806	103.67	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.8	806	103.33	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.9	806	102.23	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			823.9	806	102.22	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.7	806	101.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			812	806	100.75	PLPL81/W30 Project and 230 kV study

Table E11.4.2: Multiple Event Analysis “P3”, 2028 Light Load - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E11.5.1: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loadin g	Comment
699085 NLG 138 138 699086 ELK 138 138 1			321.7	266	120.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.3	266	120.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.3	266	117.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			309.9	266	116.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.5	266	114.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.1	223	113.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.1	223	113.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.8	266	112.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.6	266	112.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.5	209	111.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.5	229	111.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.2	266	111.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.5	266	110.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.1	266	110.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.1	266	110.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.6	266	110.37	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			293.6	266	110.37	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			326.3	306	106.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.5	266	105.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.5	266	104.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231	223	103.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231	223	103.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.9	223	103.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.9	223	103.53	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			659.4	639	103.19	Cypress area 345 kV uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.2	223	102.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.2	223	102.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.1	223	102.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.1	223	102.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.9	266	102.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.3	229	101.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.2	229	101.84	N. Lake Geneva Area Limitation
698095 SUN 138 138 699963 JOHNSTOWN 138 1			326.3	321	101.64	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.5	229	101.11	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loadin g	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.4	229	101.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.9	266	100.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.9	209	100.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.8	209	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.9	266	100.35	N. Lake Geneva Area Limitation

Table E11.5.2: Multiple Event Analysis “P3”, 2028 Shoulder Sensitivity “Elm Road Unit Out” - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E12.1.1: Multiple Event Analysis “P6”, 2028 Summer Peak - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			315.4	223	141.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			315.4	223	141.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			315.3	223	141.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			315.3	223	141.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			317.7	229	138.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			317.7	229	138.74	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			285.5	209	136.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			285.5	209	136.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			301.1	223	135.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			301.1	223	135.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			301.1	223	135	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			301.1	223	135	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			298.4	223	133.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			298.4	223	133.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			298.4	223	133.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			298.4	223	133.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			303.4	229	132.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			303.4	229	132.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			293.5	223	131.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			293.5	223	131.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			293.5	223	131.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			293.5	223	131.61	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			300.8	229	131.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			300.8	229	131.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			270.8	209	129.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			270.8	209	129.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			295.9	229	129.2	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			295.9	229	129.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			268.2	209	128.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			268.2	209	128.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.5	223	127.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.5	223	127.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.5	223	127.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.4	223	127.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.8	223	126.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			282.8	223	126.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.8	223	126.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			282.7	223	126.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			263.4	209	126.03	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			263.4	209	126.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.8	223	125.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.8	223	125.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.8	223	125.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.8	223	125.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.8	229	125.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.8	229	125.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.1	229	124.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.1	229	124.5	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.2	229	123.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.2	229	123.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.2	223	122.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			273.2	223	122.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.2	223	122.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			273.2	223	122.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.8	209	121.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			254.8	209	121.91	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.6	223	121.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271.6	223	121.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			271.6	223	121.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			271.6	223	121.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.1	209	121.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.1	209	121.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.7	223	120.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.6	223	120.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.6	223	120.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.6	223	120.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.3	223	120.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.3	223	120.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			269.3	223	120.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			269.3	223	120.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.2	266	120.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			321.2	266	120.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.7	223	120.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.7	223	120.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.7	223	120.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.7	223	120.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.4	223	120.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.4	223	120.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			268.4	223	120.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			268.4	223	120.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.5	229	120.33	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.6	229	120.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.9	223	120.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.9	223	120.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.9	223	120.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.1	266	119.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			319.1	266	119.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.3	223	119.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.3	223	119.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.3	223	119.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.3	223	119.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.3	223	119.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.3	223	119.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.2	223	119.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.2	223	119.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.7	266	119.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.6	266	119.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			267.1	223	119.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			267.1	223	119.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.9	223	119.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250.2	209	119.7	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250.2	209	119.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.9	223	119.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.9	223	119.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.9	223	119.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274	229	119.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			274	229	119.64	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.2	223	119.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			266.2	223	119.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.2	223	119.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			266.2	223	119.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.7	223	119.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.7	223	119.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.7	223	119.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.7	223	119.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.2	223	118.94	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.2	223	118.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.2	223	118.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.2	223	118.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.1	223	118.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.1	223	118.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.1	223	118.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.1	223	118.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.9	223	118.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272	229	118.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.9	223	118.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.8	223	118.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272	229	118.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.8	223	118.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.75	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.7	223	118.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.7	223	118.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.7	223	118.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.7	223	118.7	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.7	229	118.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271.7	229	118.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.5	223	118.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.5	223	118.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.5	223	118.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.5	223	118.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.2	223	118.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.2	223	118.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.1	223	118.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.1	223	118.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271	229	118.36	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			271	229	118.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.9	223	118.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.9	223	118.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.9	223	118.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.9	223	118.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.8	223	118.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.8	223	118.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.8	223	118.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.8	223	118.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.8	223	118.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.7	223	118.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.7	223	118.27	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.7	223	118.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.8	229	118.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.7	229	118.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			314.2	266	118.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.3	229	118.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			270.3	229	118.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.7	229	117.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.7	229	117.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.6	229	117.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.6	229	117.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.5	229	117.67	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.4	229	117.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.3	229	117.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			269.2	229	117.58	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.1	248	117.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291.1	248	117.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291	248	117.35	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			291	248	117.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.6	229	117.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.6	229	117.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.4	223	117.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.4	223	117.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			261.4	223	117.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			261.4	223	117.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.1	229	117.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.1	229	117.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.6	229	116.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.6	229	116.84	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.5	229	116.8	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.5	229	116.8	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.3	229	116.71	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.7	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.68	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.68	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.68	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.67	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.1	229	116.62	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.1	229	116.62	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			289.2	248	116.6	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			289.2	248	116.6	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			310.1	266	116.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			310.1	266	116.56	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.8	229	116.52	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.8	229	116.52	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			243.3	209	116.43	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			243.3	209	116.43	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.5	229	116.38	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.5	229	116.38	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.3	229	116.27	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.3	229	116.27	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.1	229	116.2	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.1	229	116.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			309	266	116.18	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			309	266	116.18	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			287.7	248	116.02	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			287.7	248	116.01	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			287.6	248	115.95	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			287.6	248	115.95	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			241.8	209	115.68	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			241.8	209	115.68	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			307	266	115.4	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			306.9	266	115.39	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			306.8	266	115.32	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			306.7	266	115.31	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			285.7	248	115.2	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			285.7	248	115.2	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			263.8	229	115.18	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			263.7	229	115.16	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.9	266	114.99	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.9	266	114.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			256.3	223	114.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			256.2	223	114.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			256.2	223	114.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			256.2	223	114.9	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			239.9	209	114.78	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			239.9	209	114.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.2	266	114.73	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.2	266	114.72	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			239.3	209	114.52	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			239.3	209	114.52	N. Lake Geneva Area Limitation
699410 PARIS WE	138	699982 RAYMOND	138 1			383.6	335	114.51	mitigation available
699410 PARIS WE	138	699982 RAYMOND	138 1			383.6	335	114.51	mitigation available
699085 NLG 138	138	699086 ELK 138	138 1			304.4	266	114.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			304.4	266	114.44	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			238.7	209	114.22	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			238.7	209	114.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.5	209	114.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238.4	209	114.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.3	266	114.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.2	223	113.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.2	223	113.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.2	223	113.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.2	223	113.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.1	266	113.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303	266	113.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.9	266	113.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238	209	113.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.86	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			238	209	113.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.6	266	113.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.7	223	113.75	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			302.6	266	113.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.6	223	113.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.6	223	113.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.6	223	113.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.3	266	113.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.3	266	113.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.5	209	113.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.5	209	113.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.4	209	113.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.3	209	113.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237.3	209	113.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253	223	113.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253	223	113.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253	223	113.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253	223	113.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237	209	113.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			237	209	113.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.7	223	113.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.7	223	113.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.2	266	113.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.1	266	113.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.1	266	113.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301	266	113.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301	266	113.16	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.3	209	113.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.3	209	113.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.6	229	112.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.6	229	112.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.84	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			235.7	209	112.77	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			235.7	209	112.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.8	266	112.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.8	266	112.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.7	266	112.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.3	209	112.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.3	209	112.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251	223	112.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251	223	112.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251	223	112.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251	223	112.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.2	209	112.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.2	209	112.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.2	209	112.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.1	209	112.51	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			299.2	266	112.5	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			299.3	266	112.5	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			235	209	112.43	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			235	209	112.43	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.9	209	112.41	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.9	209	112.4	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.9	266	112.39	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			299	266	112.39	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.8	209	112.35	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.8	209	112.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.8	266	112.33	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.8	266	112.32	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.7	266	112.3	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.7	266	112.29	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.7	266	112.28	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.7	266	112.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.6	266	112.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.6	266	112.26	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.6	209	112.25	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.6	209	112.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			250.2	223	112.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			250.2	223	112.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			250.2	223	112.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			250.2	223	112.18	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.3	209	112.08	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			234.3	209	112.08	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			298.1	266	112.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			298.1	266	112.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.5	229	112.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.5	229	112.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.98	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.96	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234	209	111.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.8	266	111.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.8	266	111.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.3	229	111.92	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.3	229	111.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.3	229	111.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.3	229	111.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256	229	111.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256	229	111.78	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.9	266	111.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.9	266	111.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.9	266	111.6	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			296.8	266	111.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.8	266	111.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.8	266	111.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.7	266	111.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.3	229	111.5	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.3	229	111.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.5	266	111.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.5	266	111.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.4	223	111.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.4	223	111.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.4	223	111.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.4	223	111.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.36	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.3	223	111.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.3	223	111.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.3	223	111.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.1	266	111.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.2	223	111.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.1	266	111.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.22	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			295.6	266	111.12	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.6	266	111.12	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.6	266	111.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.6	266	111.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.2	266	110.99	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			295.2	266	110.99	N. Lake Geneva Area Limitation
693647 BERRYVILLE	138	699409 PARIS B5	138 1			445.8	402	110.9	mitigation available
693647 BERRYVILLE	138	699409 PARIS B5	138 1			445.8	402	110.9	mitigation available
698879 SGR CK4	138	699360 NLK GV T	138 1			231.7	209	110.87	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			231.7	209	110.85	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.8	266	110.81	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.8	266	110.81	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.7	266	110.8	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.7	266	110.8	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.5	266	110.7	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.4	266	110.69	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			253.3	229	110.62	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			253.3	229	110.62	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.1	266	110.58	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			294.1	266	110.57	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.8	266	110.47	N. Lake Geneva Area Limitation
699410 PARIS WE	138	699982 RAYMOND	138 1			370.1	335	110.47	mitigation available
699410 PARIS WE	138	699982 RAYMOND	138 1			370	335	110.46	mitigation available
699085 NLG 138	138	699086 ELK 138	138 1			293.8	266	110.46	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.6	266	110.36	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.5	266	110.35	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.5	266	110.33	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			293.5	266	110.32	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			252.5	229	110.28	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			293.3	266	110.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.3	266	110.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.2	266	110.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.11	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			368.1	335	109.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.88	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			368.1	335	109.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.8	266	109.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.4	266	109.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.4	266	109.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.8	229	109.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.7	229	109.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.2	266	109.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291.2	266	109.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.7	229	109.46	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.6	229	109.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244	223	109.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244	223	109.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291	266	109.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			291	266	109.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.9	223	109.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.9	223	109.38	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			290.7	266	109.3	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.7	266	109.3	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.7	266	109.28	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.6	266	109.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.6	266	109.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.6	266	109.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.2	266	109.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			290.2	266	109.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			243.2	223	109.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			243.2	223	109.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			243.2	223	109.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			243.2	223	109.06	N. Lake Geneva Area Limitation
699442 ST MARTIN B3	138	699982 RAYMOND	138 1			365.3	335	109.04	mitigation available
699442 ST MARTIN B3	138	699982 RAYMOND	138 1			365.3	335	109.04	mitigation available
694007 CEDRSAUK B4	345	694009 EDG BUS2	345 1			716.8	659	108.77	mitigation available
694007 CEDRSAUK B4	345	694009 EDG BUS2	345 1			716.7	659	108.76	mitigation available
698879 SGR CK4	138	699360 NLK GV T	138 1			226.8	209	108.5	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			226.7	209	108.48	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			363.1	335	108.39	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			363.1	335	108.39	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			288.3	266	108.38	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			288.3	266	108.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.3	223	108.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.3	223	108.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.3	223	108.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.3	223	108.2	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			267.6	248	107.89	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			267.6	248	107.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			240.5	223	107.87	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.5	223	107.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.5	223	107.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.5	223	107.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.3	223	107.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.3	223	107.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.1	209	107.72	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			225.1	209	107.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.4	229	107.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.3	229	107.55	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.5	248	107.46	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			266.5	248	107.45	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.4	209	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.4	209	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.6	229	107.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.6	229	107.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.1	223	107.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239	223	107.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239	223	107.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239	223	107.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.9	209	107.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.9	209	107.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.2	209	106.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.2	209	106.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.9	209	106.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.9	209	106.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.4	223	106.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.4	223	106.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.4	223	106.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.3	223	106.43	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.7	229	106.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.7	229	106.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283	266	106.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283	266	106.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.1	223	106.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.1	223	106.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.3	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			356	335	106.28	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			355.7	335	106.19	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.1	248	106.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			263.1	248	106.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.2	266	106.08	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.9	229	106.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.1	266	106.07	N. Lake Geneva Area Limitation
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1071.1	1010	106.05	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693353 PARIS BUS1 345 695030 COSMOS 345 345 1			1071.1	1010	106.05	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.8	229	106.04	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.9	248	106.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.7	229	105.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.6	229	105.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.2	209	105.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.2	209	105.83	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			354.4	335	105.8	N. Lake Geneva Area Limitation
698865 BLUMND6 138 699275 BDLT5063T 138 1			155.5	147	105.77	mitigation available
698865 BLUMND6 138 699275 BDLT5063T 138 1			155.5	147	105.77	mitigation available
699060 COR 138 138 699062 MRE 138 138 1			354.2	335	105.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.1	266	105.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.6	223	105.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.5	223	105.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.58	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.2	223	105.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.2	223	105.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.1	223	105.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.1	223	105.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.3	209	105.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.4	229	105.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.3	209	105.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.4	229	105.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.3	266	105.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.3	266	105.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.1	248	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.28	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.1	248	105.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			352.5	335	105.21	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			352.4	335	105.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.7	266	105.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.7	248	105.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.7	248	105.13	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			422.3	402	105.04	mitigation available

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			422.3	402	105.04	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			351.7	335	104.99	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			351.7	335	104.99	mitigation available
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.1	223	104.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			234.1	223	104.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.1	223	104.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			234.1	223	104.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.96	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.81	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			350.8	335	104.73	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			350.8	335	104.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.7	229	104.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.7	229	104.68	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.8	209	104.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.6	248	104.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.3	266	104.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.3	266	104.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.6	209	104.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.2	266	104.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.2	266	104.58	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			218.6	209	104.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.4	229	104.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.4	229	104.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233	223	104.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233	223	104.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.9	223	104.46	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			349.9	335	104.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.9	223	104.45	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			349.8	335	104.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.8	223	104.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.8	223	104.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.8	223	104.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.8	223	104.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.4	266	104.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.3	266	104.24	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277.3	266	104.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.5	248	104.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.22	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.4	248	104.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.6	229	104.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.6	229	104.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.15	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			348.4	335	104	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			348.3	335	103.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.5	266	103.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.5	266	103.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.8	248	103.94	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.7	248	103.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238	229	103.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.9	229	103.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.3	266	103.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.6	223	103.87	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.3	266	103.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.6	223	103.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.6	223	103.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.6	223	103.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276	266	103.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.9	266	103.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.5	229	103.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.9	266	103.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.5	229	103.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.2	223	103.69	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.2	248	103.69	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.2	223	103.68	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.1	248	103.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231.2	223	103.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			231.2	223	103.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.7	266	103.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.7	266	103.66	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			216.5	209	103.61	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			216.5	209	103.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.6	266	103.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.5	266	103.59	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			346.9	335	103.56	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			346.9	335	103.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.8	266	103.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.7	266	103.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.4	229	103.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			236.4	229	103.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.1	223	103.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.1	223	103.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.1	223	103.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230	223	103.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.4	266	103.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.4	266	103.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.2	266	103.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.2	266	103.07	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			344.9	335	102.97	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699060 COR 138 138 699062 MRE 138 138 1			344.7	335	102.91	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			657.5	639	102.89	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.87	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			657.4	639	102.87	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.4	223	102.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.4	223	102.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.3	223	102.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.3	223	102.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.3	229	102.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.3	229	102.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.3	266	102.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.2	266	102.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.1	229	102.67	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.1	229	102.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.9	266	102.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.9	266	102.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.3	223	102.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.3	223	102.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.3	223	102.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.3	223	102.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.9	209	102.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.35	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.9	209	102.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.1	223	102.29	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.8	209	102.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.1	223	102.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.7	209	102.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.6	248	102.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.1	223	102.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228	223	102.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			253.6	248	102.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234	229	102.17	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234	229	102.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.7	266	102.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.6	223	102.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.6	223	102.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.5	223	102.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.5	223	102.03	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			341.8	335	102.02	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			341.8	335	102.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.3	266	101.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.6	229	101.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.5	229	101.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.3	266	101.99	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			252.7	248	101.88	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.6	248	101.86	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			140.4	138	101.76	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			140.4	138	101.75	N. Lake Geneva Area Limitation
694106 ROR BUS1	138	699062 MRE 138	138 1			380.4	374	101.7	N. Lake Geneva Area Limitation
694106 ROR BUS1	138	699062 MRE 138	138 1			380.3	374	101.69	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.2	248	101.69	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.2	248	101.68	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.1	248	101.66	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.1	248	101.65	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			270.4	266	101.64	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			270.4	266	101.64	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252	248	101.6	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252	248	101.6	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			140.1	138	101.54	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			270.1	266	101.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			270.1	266	101.52	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			251.7	248	101.51	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			232.4	229	101.49	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			251.7	248	101.49	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			251.7	248	101.49	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			232.4	229	101.49	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			251.7	248	101.47	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			269.8	266	101.42	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			269.8	266	101.41	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			269.7	266	101.41	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			269.8	266	101.41	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			139.9	138	101.39	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699060 COR 138 138 699062 MRE 138 138 1			339.5	335	101.35	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			339.5	335	101.34	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.2	248	101.3	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.2	248	101.29	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.9	304	101.27	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			307.9	304	101.27	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.7	138	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.1	248	101.24	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			251.1	248	101.24	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.7	138	101.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.9	248	101.18	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.9	248	101.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.7	229	101.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.7	229	101.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.15	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.6	223	101.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.14	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.5	223	101.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.13	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.7	248	101.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.5	223	101.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.7	248	101.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.4	223	101.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.4	223	101.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.4	223	101.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.4	223	101.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.2	209	101.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.3	223	101.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.1	209	101.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.2	223	101.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.2	223	101	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.2	223	101	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.4	248	100.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.4	248	100.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.97	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			645.2	639	100.97	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			645.1	639	100.96	Cypress Area 345 kV Uprate study
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.93	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.2	248	100.89	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.2	138	100.89	N. Lake Geneva Area Limitation

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Monitored Element					First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698080 BCH 69	69.0	699070 BCH 138	138	1			139.2	138	100.89	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			250.2	248	100.89	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138	1			338	335	100.88	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138	1			338	335	100.88	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			250.1	248	100.83	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			250	248	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.8	223	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.8	223	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224.8	223	100.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224.8	223	100.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.7	223	100.78	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			249.9	248	100.77	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			249.9	248	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224.7	223	100.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268	266	100.75	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			268	266	100.75	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			210.5	209	100.73	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138	1			230.7	229	100.73	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			210.5	209	100.73	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138	1			230.7	229	100.72	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138	1			306.2	304	100.72	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138	1			306.2	304	100.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.6	223	100.72	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			249.8	248	100.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224.6	223	100.71	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138	1			249.8	248	100.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.5	223	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			224.5	223	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			224.5	223	100.68	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.5	223	100.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.5	223	100.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.4	229	100.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.61	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.4	229	100.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.2	223	100.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.2	223	100.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.2	248	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.48	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.2	248	100.47	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.45	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249.1	248	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.9	229	100.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.9	229	100.39	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.38	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			138.5	138	100.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.8	223	100.38	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			138.5	138	100.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.9	223	100.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.37	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			375.3	374	100.35	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			375.3	374	100.35	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			336	335	100.29	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			336	335	100.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.6	209	100.28	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.6	209	100.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.7	248	100.27	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698082 WIB 138	138	699070 BCH 138	138 1			225.5	225	100.23	N. Lake Geneva Area Limitation
698082 WIB 138	138	699070 BCH 138	138 1			225.5	225	100.23	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.5	248	100.21	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.5	248	100.2	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.4	248	100.17	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.4	248	100.16	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.4	248	100.15	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.3	248	100.14	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.3	266	100.13	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.3	266	100.12	N. Lake Geneva Area Limitation
699047 ROR 138	138	699141 TOWNLINE	138 2			595.7	595	100.11	N. Lake Geneva Area Limitation
699047 ROR 138	138	699141 TOWNLINE	138 2			595.7	595	100.11	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304.3	304	100.08	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304.3	304	100.08	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.1	248	100.06	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.2	248	100.06	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.1	248	100.05	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			209.1	209	100.05	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.1	248	100.05	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			209.1	209	100.05	N. Lake Geneva Area Limitation
699047 ROR 138	138	699141 TOWNLINE	138 2			595.2	595	100.03	N. Lake Geneva Area Limitation
699047 ROR 138	138	699141 TOWNLINE	138 2			595.2	595	100.03	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248	248	100.02	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			306	306	100.01	N. Lake Geneva Area Limitation
699950 LKHD TP	138	699963 JOHNSTOWN	138 1			306	306	100.01	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248	248	100.01	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304	304	100	N. Lake Geneva Area Limitation

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Table E12.1.2: Multiple Event Analysis “P6”, 2028 Summer Peak – Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
693421	STATE LINE	138			0.8181	mitigation available
698518	SPRG VAL	138			0.8182	mitigation available
693710	BALSAM 138	138			0.8288	mitigation available
698518	SPRG VAL	138			0.8396	mitigation available
693421	STATE LINE	138			0.8397	mitigation available
693710	BALSAM 138	138			0.8494	mitigation available
699346	KENOSHA6	138			0.8765	mitigation available
699345	KENOSH45	138			0.8765	mitigation available
699346	KENOSHA6	138			0.8766	mitigation available
699345	KENOSH45	138			0.8766	mitigation available
699227	HUBBARD_138	138			0.8834	LTC reverse flow mitigation
698933	HUSTISFD T2	138			0.8858	LTC reverse flow mitigation
698932	HUS TAP 2	138			0.8858	LTC reverse flow mitigation
698230	HUSTISFD T1	138			0.8858	LTC reverse flow mitigation
698931	HUS TAP 1	138			0.8858	LTC reverse flow mitigation
699477	RUBICON	138			0.8881	mitigation available
699362	LAKEVIEW	138			0.8918	mitigation available
699362	LAKEVIEW	138			0.8918	mitigation available

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Table E12.2.1: Multiple Event Analysis “P6”, 2033 Summer Peak - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			329.9	223	147.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			329.9	223	147.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			329.9	223	147.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			329.9	223	147.95	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			332.3	229	145.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			332.3	229	145.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			299.9	209	143.48	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			299.9	209	143.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			314	223	140.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			313.9	223	140.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			313.9	223	140.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			313.9	223	140.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			311.3	223	139.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			311.3	223	139.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			311.3	223	139.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			311.3	223	139.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			316.3	229	138.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			316.3	229	138.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			306.4	223	137.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			306.4	223	137.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			306.3	223	137.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			306.3	223	137.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			313.7	229	136.97	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			313.7	229	136.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			283.5	209	135.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			283.5	209	135.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			308.7	229	134.81	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			308.7	229	134.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			280.9	209	134.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			280.9	209	134.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			296.8	223	133.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			296.8	223	133.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			296.8	223	133.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			296.8	223	133.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			295.1	223	132.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			295.1	223	132.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			295.1	223	132.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			295.1	223	132.31	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			276.1	209	132.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			276.1	209	132.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			292.6	223	131.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			292.6	223	131.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			292.6	223	131.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			292.6	223	131.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			299.2	229	130.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			299.1	229	130.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			297.4	229	129.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			297.4	229	129.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287.4	223	128.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			287.4	223	128.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287.4	223	128.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			287.4	223	128.86	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			295	229	128.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			295	229	128.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			341.9	266	128.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			341.9	266	128.52	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.2	223	127.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			285.2	223	127.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.1	223	127.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			285.1	223	127.86	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			267	209	127.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			267	209	127.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			339.6	266	127.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			339.5	266	127.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			338.3	266	127.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			338.3	266	127.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.5	223	127.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.5	223	127.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			283.5	223	127.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			283.5	223	127.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			265.3	209	126.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			265.3	209	126.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			337	266	126.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			337	266	126.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			336.6	266	126.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			336.6	266	126.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.7	229	126.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			289.7	229	126.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.6	223	126.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281.6	223	126.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.6	223	126.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281.6	223	126.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			335.7	266	126.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			335.7	266	126.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281	223	126.02	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281	223	126.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			281	223	126	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			281	223	125.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.6	223	125.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.6	223	125.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.6	223	125.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.6	223	125.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.5	223	125.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.5	223	125.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.5	223	125.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.5	223	125.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			262.8	209	125.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			262.8	209	125.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.2	223	125.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.2	223	125.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.2	223	125.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.2	223	125.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.1	223	125.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.1	223	125.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280.1	223	125.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280.1	223	125.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280	223	125.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			280	223	125.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280	223	125.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			280	223	125.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			287.5	229	125.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			287.5	229	125.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.9	223	125.52	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.9	223	125.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.9	223	125.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.9	223	125.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.7	223	125.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.6	223	125.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.6	223	125.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279.6	223	125.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279.1	223	125.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279	223	125.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			279	223	125.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			279	223	125.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.9	223	125.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.9	223	125.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.9	223	125.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.9	223	125.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			332.1	266	124.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			332.1	266	124.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.9	229	124.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			285.9	229	124.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.3	223	124.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			278.3	223	124.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.3	223	124.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			278.3	223	124.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			331.3	266	124.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			331.3	266	124.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.5	223	124.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.5	223	124.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.5	223	124.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.5	223	124.44	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277	223	124.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277	223	124.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277	223	124.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277	223	124.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.9	223	124.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.9	223	124.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.9	223	124.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.8	223	124.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.7	223	124.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.6	223	124.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.7	223	124.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.6	223	124.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.9	229	123.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.9	229	123.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.1	223	123.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.1	223	123.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.1	223	123.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.1	223	123.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.4	229	123.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283.3	229	123.72	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283	229	123.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.6	223	123.57	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.2	340	123.57	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.6	223	123.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			283	229	123.57	N. Lake Geneva Area Limitation
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
698857 OC CRK8 230 693694 OAK CK LT884 345 1			420.1	340	123.57	230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.5	223	123.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.5	223	123.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.9	229	123.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.9	229	123.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.3	223	123.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			275.3	223	123.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.3	223	123.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			275.3	223	123.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.6	229	123.39	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.5	229	123.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.5	229	123.35	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.5	229	123.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.4	229	123.31	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.4	229	123.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327.9	266	123.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			327.9	266	123.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.2	229	123.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282.3	229	123.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282	229	123.15	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			282	229	123.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.3	248	123.1	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			305.3	248	123.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.1	209	123.02	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			257.1	209	123.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.4	229	122.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.4	229	122.88	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.3	229	122.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			281.3	229	122.82	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			989.4	806	122.75	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			989.4	806	122.75	PLPL81/W30 Project and 230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			412.4	336	122.73	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			412.3	336	122.72	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			412.4	336	122.72	230 kV study
693695 ELM RD LT895 230 699367 ELM ROAD 345 1			412.3	336	122.72	230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			304	248	122.59	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			304	248	122.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.7	229	122.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.7	229	122.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.9	229	122.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.9	229	122.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.4	223	122.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.4	223	122.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.4	223	122.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.4	223	122.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.1	209	122.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			255.1	209	122.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.4	229	121.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.4	229	121.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.2	229	121.93	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279.2	229	121.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.2	266	121.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			324.2	266	121.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279	229	121.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			279	229	121.84	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			302.2	248	121.84	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			302.2	248	121.84	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			301.9	248	121.71	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			301.8	248	121.7	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			278.5	229	121.6	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			278.4	229	121.59	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			323.2	266	121.49	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			323.2	266	121.49	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			277.9	229	121.36	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			277.9	229	121.36	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			253.6	209	121.36	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			253.6	209	121.34	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			277.7	229	121.25	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			277.6	229	121.24	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			322.4	266	121.19	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			322.3	266	121.17	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			300.5	248	121.17	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			300.5	248	121.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			270.1	223	121.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			270	223	121.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			270.1	223	121.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			270	223	121.09	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			322	266	121.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			322	266	121.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			321.7	266	120.95	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			321.7	266	120.94	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			321.7	266	120.93	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			321.7	266	120.92	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			320.7	266	120.55	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			320.6	266	120.54	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			298.7	248	120.44	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			298.7	248	120.43	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			320.3	266	120.42	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			320.3	266	120.41	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			251.6	209	120.41	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			251.6	209	120.41	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.8	266	120.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.8	266	120.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.8	266	120.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.7	266	120.2	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			251.2	209	120.19	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			251.1	209	120.15	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.5	266	120.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.5	266	120.1	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.4	266	120.09	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			319.4	266	120.08	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			274.8	229	119.99	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			274.8	229	119.98	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.9	266	119.87	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.8	266	119.86	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.5	209	119.85	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.5	209	119.85	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.5	209	119.85	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.5	209	119.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.7	266	119.81	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			318.7	266	119.8	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.1	209	119.65	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			250.1	209	119.65	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			250.1	209	119.64	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250	209	119.64	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250	209	119.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			250	209	119.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.9	209	119.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.9	209	119.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.9	266	119.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.8	266	119.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.5	209	119.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.5	209	119.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.3	266	119.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317.3	266	119.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.1	209	119.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			249.1	209	119.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317	266	119.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			317	266	119.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.9	266	119.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.9	266	119.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.8	209	119.03	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			248.8	209	119.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.6	266	119.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.6	266	119.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.5	266	118.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.5	266	118.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.4	229	118.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			272.4	229	118.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.4	266	118.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.4	266	118.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.4	266	118.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316.4	266	118.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316	266	118.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316	266	118.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.2	209	118.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			248.2	209	118.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.8	266	118.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.8	266	118.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.6	266	118.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.6	266	118.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.6	266	118.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.6	266	118.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.5	266	118.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.5	266	118.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.3	266	118.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.7	209	118.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.3	266	118.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			247.7	209	118.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.2	266	118.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.2	266	118.5	N. Lake Geneva Area Limitation

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Monitored Element					First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138	1			315.1	266	118.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			315	266	118.44	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.9	266	118.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.9	266	118.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.8	266	118.35	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.8	266	118.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.6	266	118.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314.6	266	118.26	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.9	209	118.14	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.9	209	118.14	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.8	209	118.07	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.7	209	118.06	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314	266	118.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314	266	118.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314	266	118.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			314	266	118.03	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.9	266	118	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.9	266	117.99	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.6	209	117.97	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138	1			246.6	209	117.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			263	223	117.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138	1			263	223	117.96	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			263	223	117.95	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138	1			263	223	117.95	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.5	266	117.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.5	266	117.84	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.3	266	117.79	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138	1			313.3	266	117.78	N. Lake Geneva Area Limitation
694007 CEDRSAUK B4	345	694009 EDG BUS2	345	1			776.1	659	117.78	mitigation available

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694007 CEDRSAUK B4 345 694009 EDG BUS2 345 1			776	659	117.75	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			313.1	266	117.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246	209	117.71	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246	209	117.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			313.1	266	117.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.8	266	117.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.8	266	117.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.8	266	117.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.8	266	117.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262.2	223	117.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262.2	223	117.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			262.2	223	117.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			262.2	223	117.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.3	266	117.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.4	209	117.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.3	266	117.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.4	209	117.41	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.3	209	117.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.1	266	117.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.1	266	117.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.1	266	117.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			312.1	266	117.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.2	229	117.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.2	229	117.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.5	266	117.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			311.5	266	117.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.1	229	117.09	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			268.1	229	117.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			311	266	116.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			311	266	116.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			311	266	116.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			311	266	116.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.6	266	116.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.6	266	116.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.1	266	116.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.1	266	116.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.1	266	116.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			310.1	266	116.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.9	223	116.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.9	223	116.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.8	223	116.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.8	223	116.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.8	223	116.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.7	223	116.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.7	223	116.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.8	266	116.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.8	266	116.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.7	223	116.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.7	223	116.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.7	266	116.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.6	223	116.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.7	266	116.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			259.5	223	116.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			259.5	223	116.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.5	266	116.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 1			309.5	266	116.35	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			242.8	209	116.19	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			242.8	209	116.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.9	266	116.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.9	266	116.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.7	266	116.05	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.7	266	116.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.5	266	115.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.5	266	115.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.3	266	115.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.4	229	115.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.4	229	115.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			308.2	266	115.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.5	229	115.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			264.5	229	115.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.2	266	115.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307.2	266	115.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307	266	115.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			307	266	115.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.6	223	115.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.6	223	115.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.5	209	115.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.6	223	115.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.6	223	115.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.5	209	115.06	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			272.7	237	115.05	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			272.7	237	115.05	Elm Road/Oak Creek Outlet study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.2	223	114.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.2	223	114.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			256.1	223	114.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			256.1	223	114.83	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			460.6	402	114.58	mitigation available
693647 BERRYVILLE 138 699409 PARIS B5 138 1			460.6	402	114.57	mitigation available
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.2	229	114.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.2	229	114.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.1	229	114.46	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.1	229	114.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262	229	114.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			261.9	229	114.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.7	223	114.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.7	223	114.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			254.6	223	114.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			254.6	223	114.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.6	266	114.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.6	266	114.13	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			381.5	335	113.89	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			381.5	335	113.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.7	223	113.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.7	223	113.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.7	223	113.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.1	266	113.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.1	266	113.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.3	223	113.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.2	223	113.11	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.2	223	113.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.2	223	113.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			236.4	209	113.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			259	229	113.09	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.9	229	113.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.5	229	112.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			258.4	229	112.86	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			378	335	112.83	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.83	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			378	335	112.83	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.82	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			235.8	209	112.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.6	223	112.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.6	223	112.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.6	223	112.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.6	223	112.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.5	223	112.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.5	223	112.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.5	223	112.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.5	223	112.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.3	223	112.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.3	223	112.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.2	223	112.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.2	223	112.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.2	223	112.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.2	223	112.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.2	223	112.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.1	223	112.62	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.9	248	112.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.1	266	112.45	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.8	248	112.42	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			376.4	335	112.36	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			257.1	229	112.26	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			376.1	335	112.26	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.3	248	112.21	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			278.3	248	112.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.9	229	112.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.3	266	112.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.5	266	111.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.1	223	111.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.1	223	111.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.1	223	111.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.1	223	111.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249	223	111.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.9	223	111.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.9	223	111.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.9	223	111.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.1	209	111.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.1	209	111.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.6	266	111.52	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.6	223	111.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.6	223	111.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.5	223	111.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.6	223	111.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.6	223	111.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.6	223	111.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.5	223	111.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.43	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			373.3	335	111.42	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			373.3	335	111.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.3	266	111.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.37	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255	229	111.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.9	266	111.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.8	266	111.22	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			695.1	625	111.22	Proxy pre-installation rating
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.7	229	111.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.6	229	111.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.6	229	111.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.7	266	111.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.6	229	111.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.2	209	111.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.08	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.1	209	111.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.4	266	111.06	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			371.7	335	110.97	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			371.7	335	110.96	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.9	229	110.89	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.9	229	110.88	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.8	229	110.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.8	229	110.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.6	229	110.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.6	229	110.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.6	248	110.74	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.6	248	110.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.6	229	110.73	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			692	625	110.72	Proxy pre-installation rating
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.5	229	110.7	N. Lake Geneva Area Limitation
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
693482 MT PLEASANT 138 693481 MT PLEASANT 345 4			691.9	625	110.7	Proxy pre-installation rating
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.8	223	110.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.7	223	110.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.8	223	110.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.7	223	110.64	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.7	223	110.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.7	223	110.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.7	223	110.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.7	223	110.61	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.2	248	110.57	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274.2	248	110.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.9	266	110.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.8	266	110.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274	248	110.47	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			274	248	110.47	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			369.9	335	110.41	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			369.8	335	110.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.33	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.6	397	110.23	230 kV study
699060 COR 138 138 699062 MRE 138 138 1			369.2	335	110.22	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.5	397	110.21	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.5	397	110.21	230 kV study
699060 COR 138 138 699062 MRE 138 138 1			369.1	335	110.19	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			437.5	397	110.19	230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.1	266	110.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.7	223	110.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293	266	110.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.6	223	110.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.6	223	110.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293	266	110.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.6	223	110.13	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			273.1	248	110.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.5	223	110.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			273.1	248	110.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.5	223	110.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.5	223	110.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.5	223	110.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230	209	110.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230	209	110.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.3	223	110.01	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.9	209	110	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.3	223	110	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.3	223	110	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.3	223	109.99	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.9	209	109.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.6	248	109.93	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.6	248	109.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.9	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.5	248	109.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.5	248	109.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.3	266	109.88	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.5	248	109.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			272.4	248	109.84	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			260.3	237	109.83	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			260.3	237	109.83	Elm Road/Oak Creek Outlet study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.4	229	109.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.4	229	109.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.4	209	109.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.4	209	109.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.3	229	109.74	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.3	229	109.73	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			367.5	335	109.69	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			367.4	335	109.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251	229	109.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.9	266	109.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.9	266	109.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.7	223	109.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.7	223	109.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.7	223	109.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.6	223	109.26	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			365.9	335	109.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.8	248	109.2	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.8	248	109.19	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			365.8	335	109.19	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.6	248	109.11	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.6	248	109.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.3	223	109.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.3	223	109.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.3	223	109.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.2	223	109.08	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			365.4	335	109.07	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			365.4	335	109.06	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			227.9	209	109.06	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			227.9	209	109.06	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.9	266	108.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.8	266	108.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.4	209	108.79	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			364.4	335	108.78	mitigation available
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.1	229	108.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.1	229	108.78	N. Lake Geneva Area Limitation
699410 PARIS WE 138 699982 RAYMOND 138 1			364.4	335	108.78	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			227.3	209	108.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.1	229	108.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249	229	108.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.4	223	108.72	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			437.1	402	108.72	mitigation available
693647 BERRYVILLE 138 699249 ALBERS-2 138 1			437	402	108.71	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			289	266	108.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289	266	108.65	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			364	335	108.65	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			364	335	108.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.3	223	108.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.3	223	108.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.7	266	108.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.7	266	108.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.6	266	108.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.6	266	108.48	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			269	248	108.48	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			269	248	108.45	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			268.9	248	108.43	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			363.2	335	108.42	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			268.9	248	108.42	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			363.2	335	108.41	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			248	229	108.29	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			248	229	108.28	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			247.9	229	108.25	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			247.9	229	108.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			287.9	266	108.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			287.9	266	108.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.2	223	108.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.2	223	108.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.2	223	108.15	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			247.7	229	108.15	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			247.6	229	108.14	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			226	209	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.2	223	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.2	223	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.1	223	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.1	223	108.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			226	209	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.1	223	108.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			241.1	223	108.12	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.6	266	108.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241	223	108.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241	223	108.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241	223	108.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241	223	108.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.2	266	107.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287.2	266	107.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287	266	107.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			287	266	107.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.3	223	107.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.4	223	107.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.77	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.9	397	107.77	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.8	397	107.77	230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.3	223	107.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.3	223	107.77	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.8	397	107.76	230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.76	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			427.8	397	107.76	230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.3	223	107.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.2	223	107.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.1	223	107.69	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.1	223	107.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.1	223	107.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240	223	107.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.3	266	107.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			286.2	266	107.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240	223	107.61	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			360.4	335	107.6	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			360.4	335	107.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.9	223	107.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.9	223	107.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.9	223	107.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.9	223	107.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.9	223	107.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.9	223	107.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.9	223	107.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.8	223	107.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.8	223	107.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.6	209	107.47	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.5	209	107.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246	229	107.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.6	223	107.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.44	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.6	223	107.43	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246	229	107.43	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			686.5	639	107.43	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			686.4	639	107.42	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.6	223	107.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.5	223	107.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.35	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			359.6	335	107.34	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			359.6	335	107.34	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			285.5	266	107.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.5	266	107.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.4	266	107.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.4	266	107.31	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.6	229	107.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.6	229	107.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.5	229	107.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.7	266	107.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.7	266	107.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.6	266	107	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.6	266	106.99	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.2	248	106.92	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.1	248	106.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.9	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861.4	806	106.87	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698080 BCH 69 69.0 699070 BCH 138 138 1			147.5	138	106.87	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			861.4	806	106.87	PLPL81/W30 Project and 230 kV study
698080 BCH 69 69.0 699070 BCH 138 138 1			147.5	138	106.86	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.9	248	106.83	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.9	248	106.83	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.6	229	106.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.68	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.5	248	106.67	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.5	248	106.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.58	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			357	335	106.56	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			357	335	106.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.6	209	106.51	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.1	248	106.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.6	209	106.5	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			264.1	248	106.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.2	266	106.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.4	209	106.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.1	266	106.41	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			283	266	106.41	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			222.4	209	106.4	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			283	266	106.4	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			222.3	209	106.38	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.9	266	106.37	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.35	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			237.1	223	106.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			237.1	223	106.33	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.33	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			237.1	223	106.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			237.1	223	106.32	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.32	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.32	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.8	266	106.31	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.5	229	106.31	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.4	229	106.29	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.3	229	106.26	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.5	248	106.26	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			243.3	229	106.26	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.5	248	106.26	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.5	248	106.24	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.5	248	106.24	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			221.9	209	106.16	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			221.9	209	106.16	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.1	248	106.1	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263.1	248	106.1	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			282.2	266	106.08	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.2	266	106.07	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263	248	106.06	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263	248	106.06	N. Lake Geneva Area Limitation
698080 BCH 69	69.0	699070 BCH 138	138 1			146.4	138	106.06	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263	248	106.06	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			263	248	106.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.1	266	106.05	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.1	266	106.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.1	266	106.04	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			282.1	266	106.04	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			355.2	335	106.02	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			355.1	335	106.01	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.7	229	105.98	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.7	229	105.98	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.7	229	105.97	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.7	229	105.96	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			354.9	335	105.95	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			221.4	209	105.93	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			221.4	209	105.92	N. Lake Geneva Area Limitation
699060 COR 138	138	699062 MRE 138	138 1			354.8	335	105.91	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.5	229	105.9	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.6	266	105.88	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			242.5	229	105.88	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.6	266	105.88	N. Lake Geneva Area Limitation
698865 BLUMND6	138	699275 BDLT5063T	138 1			155.6	147	105.87	mitigation available
699085 NLG 138	138	699086 ELK 138	138 1			281.6	266	105.86	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			281.6	266	105.86	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			262.5	248	105.86	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698865 BLUMND6 138 699275 BDLT5063T 138 1			155.6	147	105.85	mitigation available
698090 BOL 138 138 699086 ELK 138 138 1			262.5	248	105.85	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.2	209	105.84	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.3	229	105.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.2	209	105.82	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.3	229	105.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.4	248	105.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.4	266	105.79	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.4	248	105.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.3	229	105.79	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.2	229	105.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.2	229	105.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.1	229	105.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.1	229	105.74	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			242.1	229	105.73	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145.9	138	105.72	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.2	248	105.71	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262.2	248	105.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.2	266	105.7	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851.8	806	105.68	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			281.1	266	105.68	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			354	335	105.67	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851.7	806	105.67	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.9	229	105.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262	248	105.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			262	248	105.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.9	229	105.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.9	229	105.62	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			353.7	335	105.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.9	248	105.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.9	248	105.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.57	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145.7	138	105.57	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145.7	138	105.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.7	248	105.52	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.7	248	105.52	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145.6	138	105.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.6	266	105.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.6	266	105.49	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			237.3	225	105.45	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			237.2	225	105.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.3	248	105.38	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			261.3	248	105.38	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145.4	138	105.35	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			673.1	639	105.34	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			673.1	639	105.34	Cypress Area 345 kV Uprate study
694106 ROR BUS1 138 699062 MRE 138 138 1			393.7	374	105.28	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220	209	105.28	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			393.7	374	105.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220	209	105.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			352.4	335	105.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699060 COR 138 138 699062 MRE 138 138 1			352.4	335	105.18	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145	138	105.06	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			145	138	105.06	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.4	248	104.98	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.2	248	104.94	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			260.3	248	104.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.3	209	104.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279	266	104.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219.2	209	104.89	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.2	806	104.87	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			278.9	266	104.86	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			845.2	806	104.86	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			278.8	266	104.83	N. Lake Geneva Area Limitation
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			416.1	397	104.82	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			416.1	397	104.82	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			416.1	397	104.82	230 kV study
699371 OC CRK-2 138 693696 OAK CK LT851 230 1			416.1	397	104.82	230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.8	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.9	248	104.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219	209	104.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.7	266	104.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			219	209	104.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.6	223	104.75	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.2	806	104.74	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.6	223	104.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.6	266	104.74	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			844.1	806	104.72	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			259.6	248	104.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.5	266	104.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.5	266	104.69	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.6	248	104.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.5	223	104.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.4	223	104.68	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			843.7	806	104.67	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			843.6	806	104.67	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.65	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.63	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			320.2	306	104.63	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.5	248	104.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.7	209	104.62	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			320.1	306	104.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.3	266	104.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			278.3	266	104.61	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.4	248	104.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			259.4	248	104.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.5	229	104.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			239.5	229	104.56	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			842.7	806	104.55	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			259.3	248	104.55	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			218.5	209	104.54	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138	138	699086 ELK 138	138 1			259.3	248	104.54	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			259.3	248	104.54	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			259.2	248	104.53	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.5	209	104.53	N. Lake Geneva Area Limitation
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			842.4	806	104.51	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			842.3	806	104.51	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			842.3	806	104.5	PLPL81/W30 Project and 230 kV study
698090 BOL 138	138	699086 ELK 138	138 1			259.1	248	104.49	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			259.1	248	104.49	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.9	266	104.47	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.9	266	104.47	N. Lake Geneva Area Limitation
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			842	806	104.46	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			842	806	104.46	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			841.1	806	104.36	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345	345	699247 ARCADIAN 345	345 2			841.1	806	104.35	PLPL81/W30 Project and 230 kV study
698090 BOL 138	138	699086 ELK 138	138 1			258.8	248	104.35	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			258.8	248	104.34	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			258.8	248	104.34	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			258.7	248	104.33	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.5	266	104.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.5	266	104.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			232.5	223	104.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			232.5	223	104.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			232.5	223	104.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			232.5	223	104.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.25	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698090 BOL 138 138 699086 ELK 138 138 1			258.5	248	104.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			258.5	248	104.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.3	223	104.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.3	223	104.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.2	223	104.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			277	266	104.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.8	266	104.04	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			246.5	237	104.03	Elm Road/Oak Creek Outlet study
699085 NLG 138 138 699086 ELK 138 138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
698867 RACINE5 138 699481 ST RITA 138 1			246.5	237	104.03	Elm Road/Oak Creek Outlet study
698082 WIB 138 138 699070 BCH 138 138 1			234	225	104	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.6	266	104	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			234	225	104	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			388.7	374	103.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217	209	103.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217	209	103.84	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			388.3	374	103.83	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			317.6	306	103.79	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			317.5	306	103.77	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.2	248	103.71	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.2	248	103.7	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.1	248	103.69	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			257.2	248	103.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.7	266	103.66	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			275.7	266	103.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.56	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.55	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			316.5	306	103.45	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			316.5	306	103.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.2	209	103.43	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.4	248	103.4	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.4	248	103.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.6	223	103.39	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.1	209	103.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.5	223	103.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.5	223	103.38	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.3	248	103.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.5	223	103.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256.3	248	103.37	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.1	806	103.36	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			832.9	806	103.34	PLPL81/W30 Project and 230 kV study
698090 BOL 138 138 699086 ELK 138 138 1			256.2	248	103.3	N. Lake Geneva Area Limitation
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			346	335	103.3	mitigation available
699442 ST MARTIN B3 138 699982 RAYMOND 138 1			346	335	103.29	mitigation available
698090 BOL 138 138 699086 ELK 138 138 1			256.2	248	103.29	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			232.4	225	103.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256	248	103.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			256	248	103.23	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			232.3	225	103.23	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			232.2	225	103.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.7	209	103.2	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.7	209	103.2	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			232.2	225	103.19	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			215.6	209	103.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			215.6	209	103.17	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.4	806	103.16	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230	223	103.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.1	223	103.16	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.4	806	103.15	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230	223	103.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230	223	103.15	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.2	806	103.13	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			831.2	806	103.13	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			274.3	266	103.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.3	266	103.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.3	266	103.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.3	266	103.11	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			385.6	374	103.09	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			255.7	248	103.09	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			385.6	374	103.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.8	223	103.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.8	223	103.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.8	223	103.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.8	223	103.05	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.9	229	103.03	N. Lake Geneva Area Limitation
699391 OAC BUS81-82 138 699481 ST RITA 138 1			345.1	335	103.02	Elm Road/Oak Creek Outlet study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.2	304	103.02	N. Lake Geneva Area Limitation
699391 OAC BUS81-82 138 699481 ST RITA 138 1			345.1	335	103.01	Elm Road/Oak Creek Outlet study
699357 MUKWONGO 138 699512 UNVRSTY 138 1			313.1	304	103.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.8	229	102.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.6	223	102.94	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.5	223	102.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.5	223	102.93	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.5	223	102.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.5	223	102.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.5	223	102.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.4	223	102.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.4	223	102.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.7	266	102.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.6	266	102.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.3	223	102.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.3	223	102.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.3	223	102.83	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828.7	806	102.82	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.3	223	102.82	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828.7	806	102.81	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828.7	806	102.81	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			828.7	806	102.81	PLPL81/W30 Project and 230 kV study
699060 COR 138 138 699062 MRE 138 138 1			344.3	335	102.77	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			344.3	335	102.77	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			384.1	374	102.69	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			384	374	102.68	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			343.9	335	102.67	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			343.9	335	102.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.8	223	102.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.8	223	102.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.8	223	102.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.9	229	102.56	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.9	229	102.56	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			313.7	306	102.51	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			313.6	306	102.5	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.5	304	102.47	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.46	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			311.5	304	102.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.45	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			234.6	229	102.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.43	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			343	335	102.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.9	209	102.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.34	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.9	209	102.33	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.5	806	102.3	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.5	806	102.3	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			272.1	266	102.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272	266	102.27	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			342.4	335	102.2	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			382.2	374	102.2	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			382.2	374	102.19	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			410.7	402	102.18	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			213.5	209	102.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.6	209	102.18	N. Lake Geneva Area Limitation
693647 BERRYVILLE 138 699409 PARIS B5 138 1			410.8	402	102.18	mitigation available
698879 SGR CK4 138 699360 NLK GV T 138 1			213.5	209	102.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.6	209	102.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693647 BERRYVILLE 138 699409 PARIS B5 138 1			410.8	402	102.18	mitigation available
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.6	266	102.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.5	266	102.07	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.06	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.3	209	102.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.6	223	102.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.6	223	102.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.6	223	102.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.4	266	102.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.5	223	102.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.4	266	102.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.4	266	102.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.3	266	102	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			381.5	374	101.99	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310	304	101.97	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			310	304	101.97	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			381.4	374	101.97	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.7	806	101.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.6	806	101.93	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			271.1	266	101.91	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.3	806	101.9	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			271	266	101.9	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.3	806	101.89	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.2	223	101.88	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.1	806	101.87	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			821.1	806	101.87	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.7	806	101.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			820.5	806	101.8	PLPL81/W30 Project and 230 kV study
698082 WIB 138 138 699070 BCH 138 138 1			229	225	101.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.9	223	101.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.7	266	101.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.9	223	101.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.6	266	101.74	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			228.9	225	101.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.9	229	101.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.9	229	101.71	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.4	138	101.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.7	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.6	806	101.68	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.68	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			140.3	138	101.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.68	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.5	266	101.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.4	266	101.67	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.3	806	101.66	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			270.4	266	101.66	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.3	806	101.65	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			270.4	266	101.65	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			819.3	806	101.65	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			270.4	266	101.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.3	209	101.56	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.55	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			379.8	374	101.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.55	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			379.7	374	101.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270	266	101.49	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			212.1	209	101.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.4	229	101.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270	266	101.49	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.4	229	101.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.2	223	101.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.3	223	101.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.2	223	101.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.8	266	101.42	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308.3	304	101.42	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308.3	304	101.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.8	266	101.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.7	266	101.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.7	266	101.38	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308.2	304	101.38	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			308.2	304	101.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.5	266	101.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.5	266	101.32	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310	306	101.31	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			310	306	101.3	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			816.4	806	101.29	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			816.4	806	101.29	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			211.7	209	101.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.9	229	101.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.4	266	101.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.3	266	101.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.9	229	101.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			816	806	101.24	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.8	229	101.23	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.7	138	101.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.8	229	101.22	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.8	806	101.22	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.22	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.8	806	101.21	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.7	806	101.21	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.21	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.21	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.7	806	101.2	PLPL81/W30 Project and 230 kV study
699047 ROR 138 138 699141 TOWNLINE 138 2			602.1	595	101.19	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.7	229	101.19	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.19	N. Lake Geneva Area Limitation
699047 ROR 138 138 699141 TOWNLINE 138 2			602.1	595	101.19	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.5	806	101.18	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.7	229	101.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.17	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309.6	306	101.17	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			309.6	306	101.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.15	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815.2	806	101.14	PLPL81/W30 Project and 230 kV study
694106 ROR BUS1 138 699062 MRE 138 138 1			378.2	374	101.13	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			815	806	101.12	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.11	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.9	806	101.1	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.1	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			378.1	374	101.1	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.8	806	101.09	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.09	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.3	209	101.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.08	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.3	209	101.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.8	266	101.07	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.3	806	101.04	PLPL81/W30 Project and 230 kV study
698080 BCH 69 69.0 699070 BCH 138 138 1			139.4	138	101.04	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.2	806	101.02	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.2	806	101.02	PLPL81/W30 Project and 230 kV study
694105 ROR BUS3 138 699141 TOWNLINE 138 1			601	595	101.01	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.2	806	101.01	PLPL81/W30 Project and 230 kV study
694105 ROR BUS3 138 699141 TOWNLINE 138 1			601	595	101.01	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			227.3	225	101.01	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.1	806	101	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814	806	101	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.99	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814	806	100.99	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.99	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			813.9	806	100.98	PLPL81/W30 Project and 230 kV study
694106 ROR BUS1 138 699062 MRE 138 138 1			377.7	374	100.98	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			813.8	806	100.97	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.97	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			377.6	374	100.97	N. Lake Geneva Area Limitation
698082 WIB 138 138 699070 BCH 138 138 1			227.2	225	100.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.6	266	100.96	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			813.7	806	100.96	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.95	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211	209	100.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.1	229	100.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211	209	100.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.5	266	100.94	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			231.1	229	100.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.4	266	100.89	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			813	806	100.87	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.3	266	100.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.84	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			812.8	806	100.84	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.82	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.8	223	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.8	223	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.8	223	100.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.81	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.2	266	100.81	N. Lake Geneva Area Limitation
698080 BCH 69 69.0 699070 BCH 138 138 1			139.1	138	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.8	223	100.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.6	209	100.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.6	209	100.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.6	209	100.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268	266	100.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.6	209	100.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268	266	100.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.9	266	100.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.6	223	100.71	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.7	806	100.71	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.6	223	100.71	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.7	806	100.71	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.9	266	100.71	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.6	806	100.69	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.5	806	100.69	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.5	223	100.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.69	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.5	806	100.68	PLPL81/W30 Project and 230 kV study
698080 BCH 69 69.0 699070 BCH 138 138 1			138.9	138	100.68	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.4	806	100.67	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.65	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.3	209	100.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.65	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.2	806	100.64	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.1	806	100.64	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.64	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			337.1	335	100.64	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811.1	806	100.63	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			210.3	209	100.63	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			376.3	374	100.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.3	209	100.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			337.1	335	100.63	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			376.3	374	100.62	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			811	806	100.62	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.58	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.6	806	100.58	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.2	209	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.58	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.6	806	100.57	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.2	209	100.57	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.5	806	100.56	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			210.2	209	100.56	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.5	806	100.56	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.55	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.4	266	100.54	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.4	806	100.54	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.4	266	100.54	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.3	806	100.53	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.2	806	100.53	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.2	806	100.52	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.2	806	100.52	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			210.1	209	100.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.1	209	100.51	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			810.1	806	100.51	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.1	223	100.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.3	266	100.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.47	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.7	806	100.46	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.46	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.6	806	100.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.7	806	100.45	PLPL81/W30 Project and 230 kV study
699085 NLG 138 138 699086 ELK 138 138 1			267.2	266	100.45	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.9	209	100.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.2	266	100.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.2	266	100.44	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.5	806	100.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.43	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			209.9	209	100.43	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.42	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.42	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.9	223	100.42	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.4	806	100.42	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.3	806	100.41	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.9	223	100.41	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.9	223	100.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.9	229	100.4	N. Lake Geneva Area Limitation
694106 ROR BUS1 138 699062 MRE 138 138 1			375.5	374	100.4	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			809.3	806	100.4	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.9	229	100.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.38	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
694106 ROR BUS1 138 699062 MRE 138 138 1			375.4	374	100.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.8	223	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267	266	100.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.37	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.8	223	100.36	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			307.1	306	100.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.9	266	100.36	N. Lake Geneva Area Limitation
699950 LKHD TP 138 699963 JOHNSTOWN 138 1			307.1	306	100.36	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			248.9	248	100.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.8	223	100.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.9	266	100.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.8	223	100.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.9	266	100.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.31	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			336	335	100.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.7	223	100.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.31	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.7	223	100.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.3	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			336	335	100.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.7	223	100.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.6	223	100.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.27	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.27	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.7	248	100.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.26	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.7	248	100.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.25	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304.7	304	100.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.7	266	100.25	N. Lake Geneva Area Limitation
699357 MUKWONGO	138	699512 UNVRSTY	138 1			304.7	304	100.24	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.6	266	100.24	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			229.5	229	100.24	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			229.6	229	100.24	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.6	266	100.23	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			209.4	209	100.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.6	266	100.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.6	266	100.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.5	266	100.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.5	266	100.18	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			266.5	266	100.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			223.4	223	100.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			223.4	223	100.17	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.4	248	100.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			223.3	223	100.16	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			248.4	248	100.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			223.4	223	100.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			223.4	223	100.16	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.3	223	100.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.3	223	100.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.4	266	100.15	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.3	209	100.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.3	223	100.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.3	266	100.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.3	266	100.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.3	229	100.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.3	266	100.1	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304.3	304	100.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.2	229	100.1	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			335.3	335	100.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.3	266	100.1	N. Lake Geneva Area Limitation
699357 MUKWONGO 138 699512 UNVRSTY 138 1			304.3	304	100.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.2	223	100.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.2	223	100.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.2	223	100.09	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			335.3	335	100.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.2	223	100.08	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			335.2	335	100.06	N. Lake Geneva Area Limitation
699060 COR 138 138 699062 MRE 138 138 1			335.2	335	100.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.2	266	100.06	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.1	266	100.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223	223	100.02	N. Lake Geneva Area Limitation

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Table E12.2.2: Multiple Event Analysis “P6”, 2033 Summer Peak – Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
693421	STATE LINE	138			0.8194	mitigation available
698518	SPRG VAL	138			0.8196	mitigation available
693710	BALSAM 138	138			0.83	mitigation available
698518	SPRG VAL	138			0.831	mitigation available
693421	STATE LINE	138			0.831	mitigation available
693710	BALSAM 138	138			0.8411	mitigation available
699346	KENOSHA6	138			0.8833	mitigation available
699345	KENOSH45	138			0.8833	mitigation available
699346	KENOSHA6	138			0.8833	mitigation available
699345	KENOSH45	138			0.8833	mitigation available
699227	HUBBARD_138	138			0.8834	LTC reverse flow mitigation
698933	HUSTISFD T2	138			0.8858	LTC reverse flow mitigation
698932	HUS TAP 2	138			0.8859	LTC reverse flow mitigation
698230	HUSTISFD T1	138			0.8859	LTC reverse flow mitigation
698931	HUS TAP 1	138			0.8859	LTC reverse flow mitigation
699477	RUBICON	138			0.8882	mitigation available
699362	LAKEVIEW	138			0.8984	mitigation available
699362	LAKEVIEW	138			0.8984	mitigation available

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Table E12.3.1: Multiple Event Analysis “P6”, 2028 Shoulder - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.2	223	127.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			284.2	223	127.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.1	223	127.42	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			284.1	223	127.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			264.9	209	126.76	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			264.9	209	126.76	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.5	229	125.11	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			286.5	229	125.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.8	223	118.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.2	223	118.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			263.2	223	118.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.1	223	118	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			263.1	223	118	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.4	209	117.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			245.4	209	117.42	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.2	229	116.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			267.2	229	116.68	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.7	209	116.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			260	223	116.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			243.7	209	116.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			260	223	116.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			260	223	116.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			260	223	116.6	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.5	229	115.94	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			265.5	229	115.94	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.6	209	115.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			240.6	209	115.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.4	229	114.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			262.4	229	114.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.5	223	113.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.5	223	113.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.5	223	113.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.5	223	113.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.1	223	113.07	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.1	223	113.06	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.1	223	113.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.1	223	113.05	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			911	806	113.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			911	806	113.03	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.8	223	112.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.8	223	112.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.8	223	112.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.8	223	112.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.7	266	112.3	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.7	266	112.3	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.3	209	112.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.3	209	112.1	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.8	229	111.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.8	229	111.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.67	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297	266	111.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.9	209	111.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.9	209	111.44	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			232.6	209	111.32	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.6	209	111.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.5	229	111.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.5	229	111.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.4	266	111.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.4	266	111.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.1	229	110.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.1	229	110.97	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.9	266	110.88	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.9	266	110.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.9	266	110.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.7	266	110.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.6	266	110.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			292.1	266	109.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			290.8	266	109.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.5	223	108.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.5	223	108.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.2	266	108.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			289.2	266	108.71	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.2	223	108.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			242.2	223	108.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.2	223	108.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			242.2	223	108.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.7	223	108.4	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.7	223	108.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.7	223	108.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.7	223	108.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.2	266	108.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			288.1	266	108.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			241.1	223	108.1	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.9	266	107.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.9	266	107.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.5	223	107.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.5	223	107.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.37	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			239.4	223	107.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			239.4	223	107.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.8	223	107.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.8	223	107.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.8	223	107.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.8	223	107.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.6	223	106.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			238.6	223	106.98	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.6	223	106.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			238.6	223	106.97	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.8	229	106.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.5	229	106.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.77	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244.5	229	106.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.2	209	106.77	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			223.1	209	106.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284	266	106.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.9	266	106.71	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.7	223	106.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.5	266	106.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.8	209	106.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.7	209	106.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244	229	106.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			222.7	209	106.56	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			244	229	106.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.5	223	106.5	N. Lake Geneva Area Limitation

PUBLIC
Appendix D, Exhibit 1
NON-PUBLIC

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.5	223	106.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.5	223	106.49	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.5	223	106.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.2	223	106.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			237.1	223	106.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			237.1	223	106.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.3	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.4	229	106.29	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			222.1	209	106.27	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			222.1	209	106.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.13	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.3	266	106.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.8	209	106.12	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.8	209	106.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.03	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.9	266	105.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236	223	105.84	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236	223	105.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.5	266	105.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236	223	105.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236	223	105.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.9	223	105.77	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.9	223	105.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.8	223	105.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.8	223	105.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.3	266	105.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.1	266	105.66	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.6	223	105.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.6	223	105.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281	266	105.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.6	223	105.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.6	223	105.63	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.5	223	105.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.59	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.58	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.8	229	105.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.4	223	105.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.4	223	105.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.4	223	105.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.4	223	105.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			241.7	229	105.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			220.6	209	105.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.7	266	105.53	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			280.7	266	105.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.7	266	105.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.7	266	105.53	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			220.5	209	105.51	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.7	266	105.51	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			220.5	209	105.51	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			220.4	209	105.48	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.5	266	105.43	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.4	266	105.43	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.3	266	105.38	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.3	266	105.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.2	266	105.35	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.2	266	105.34	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			220.1	209	105.33	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			220.1	209	105.33	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			241.2	229	105.31	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			241.2	229	105.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			280	266	105.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			234.7	223	105.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			234.7	223	105.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			234.7	223	105.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			234.7	223	105.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.21	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.8	266	105.2	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240.9	229	105.2	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240.9	229	105.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.8	266	105.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.6	266	105.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.6	266	105.1	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.3	266	105	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.3	266	105	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			219.4	209	104.99	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			219.4	209	104.98	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.2	266	104.96	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			279.1	266	104.93	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			219.2	209	104.87	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			219.2	209	104.87	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240.1	229	104.83	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240.1	229	104.83	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240	229	104.82	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			240	229	104.82	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			239.8	229	104.72	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			239.8	229	104.72	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			278.3	266	104.63	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			278.3	266	104.63	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			239.5	229	104.58	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			239.4	229	104.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			278	266	104.52	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			278	266	104.51	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.3	209	104.47	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.3	209	104.46	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.3	209	104.46	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.3	209	104.46	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.9	266	104.46	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.8	266	104.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.8	266	104.45	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.8	266	104.45	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.3	209	104.44	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.2	209	104.4	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.1	209	104.34	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			218.1	209	104.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.3	266	104.26	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.2	266	104.23	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.2	266	104.23	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			232.4	223	104.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			232.4	223	104.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			232.4	223	104.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.2	266	104.2	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			277.1	266	104.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			232.3	223	104.19	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.8	266	104.08	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			238.4	229	104.08	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.8	266	104.08	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			238.3	229	104.08	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.8	266	104.07	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.8	266	104.06	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.7	266	104.03	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			238.2	229	104.01	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			238.2	229	104.01	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.6	266	103.99	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.9	229	103.91	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.9	229	103.91	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.9	229	103.89	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.9	229	103.89	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.3	266	103.87	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			276.3	266	103.86	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.7	229	103.81	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237.7	229	103.81	N. Lake Geneva Area Limitation
698867 RACINE5	138	699481 ST RITA	138 1			246	237	103.79	Elm Road/Oak Creek Outlet study
698867 RACINE5	138	699481 ST RITA	138 1			246	237	103.79	Elm Road/Oak Creek Outlet study
699085 NLG 138	138	699086 ELK 138	138 1			275.9	266	103.71	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.9	266	103.71	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.8	266	103.7	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.8	266	103.7	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			257.2	248	103.69	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			257.2	248	103.69	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.7	209	103.67	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.7	209	103.67	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.6	266	103.6	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.5	209	103.59	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.5	209	103.59	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.5	266	103.59	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.5	266	103.56	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			275.5	266	103.56	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.4	266	103.54	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.4	266	103.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.4	266	103.53	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			275.4	266	103.53	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237	229	103.5	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			237	229	103.49	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.3	209	103.47	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.3	209	103.47	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.2	209	103.44	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216.2	209	103.44	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216	209	103.35	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			216	209	103.34	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.9	209	103.29	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.8	209	103.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.7	266	103.27	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.7	266	103.26	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.8	209	103.25	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			215.8	209	103.25	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.3	266	103.13	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.3	266	103.13	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.2	266	103.1	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274.2	266	103.09	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274	266	103.01	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			274	266	103	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			273.8	266	102.95	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			273.8	266	102.95	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			273.4	266	102.78	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			273.4	266	102.77	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			273	266	102.62	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			273	266	102.62	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			254.2	248	102.51	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			254.2	248	102.51	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			234.7	229	102.49	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			234.7	229	102.48	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			253.8	248	102.34	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			253.8	248	102.34	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			271.8	266	102.2	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			213.6	209	102.19	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			271.8	266	102.19	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			213.5	209	102.17	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			271.6	266	102.11	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			271.6	266	102.1	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.4	248	101.79	N. Lake Geneva Area Limitation
698090 BOL 138	138	699086 ELK 138	138 1			252.4	248	101.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			226.2	223	101.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			226	223	101.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			226	223	101.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			226	223	101.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			226	223	101.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			225.9	223	101.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			225.9	223	101.32	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			225.9	223	101.31	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			225.9	223	101.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699516 BLUFFCRK	138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP	138	699488 SGR CK5	138 1			225.8	223	101.25	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.14	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			250.8	248	101.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.6	223	100.72	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			643.6	639	100.72	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.6	223	100.71	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			643.6	639	100.71	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.6	223	100.7	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.5	223	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.4	223	100.62	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.56	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249	248	100.42	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			249	248	100.42	N. Lake Geneva Area Limitation

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Table E12.3.2: Multiple Event Analysis “P6”, 2028 Shoulder - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
698518	SPRG VAL	138			0.8709	mitigation available
693421	STATE LINE	138			0.873	mitigation available
693710	BALSAM 138	138			0.8736	mitigation available
698518	SPRG VAL	138			0.8797	mitigation available
693421	STATE LINE	138			0.8819	mitigation available
693710	BALSAM 138	138			0.8822	mitigation available

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E12.4.1: Multiple Event Analysis “P6”, 2028 Light Load - Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1116.8	806	138.57	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			1116.8	806	138.57	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1			312	246	126.81	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			311.9	246	126.81	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			298.7	246	121.44	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			298.7	246	121.43	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			282	246	114.65	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			282	246	114.65	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			902.4	806	111.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			902.4	806	111.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			901.1	806	111.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			901.1	806	111.8	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			899.5	806	111.6	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			899.5	806	111.6	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			898.3	806	111.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			898.3	806	111.45	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			897.4	806	111.35	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			897.4	806	111.34	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			895.9	806	111.15	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			895.8	806	111.15	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			887.2	806	110.08	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			887.2	806	110.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.3	806	109.47	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			882.3	806	109.47	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			879.1	806	109.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			879.1	806	109.07	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.8	806	107.41	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			865.7	806	107.41	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864	806	107.2	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864	806	107.2	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864	806	107.2	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			864	806	107.19	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			863.4	806	107.12	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			863.4	806	107.12	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			863.3	806	107.1	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			863.2	806	107.1	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.1	806	106.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.1	806	106.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.1	806	106.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			862.1	806	106.96	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			860.2	806	106.72	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			860.2	806	106.72	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			860	806	106.7	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.9	806	106.69	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.4	806	106.62	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.3	806	106.62	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.3	806	106.62	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			859.3	806	106.62	PLPL81/W30 Project and 230 kV study
698879 SGR CK4 138 699360 NLK GV T 138 1			234.1	220	106.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.1	220	106.42	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			857	806	106.32	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			856.9	806	106.32	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			856.4	806	106.25	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			856.3	806	106.25	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			855.4	806	106.13	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			855.4	806	106.12	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.8	806	106.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.8	806	106.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.6	806	106.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.6	806	106.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.4	806	106	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854.2	806	105.98	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854	806	105.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			854	806	105.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			853.9	806	105.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			853.9	806	105.95	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			852.6	806	105.79	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			852.6	806	105.78	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			852.2	806	105.74	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			852.2	806	105.73	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851.1	806	105.6	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851	806	105.59	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851.1	806	105.59	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			851	806	105.58	PLPL81/W30 Project and 230 kV study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244	234	104.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			244	234	104.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244	234	104.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			244	234	104.28	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840.1	806	104.24	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840	806	104.22	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			840	806	104.22	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.6	806	104.17	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			839.6	806	104.17	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.9	806	104.09	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.9	806	104.08	PLPL81/W30 Project and 230 kV study

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.7	806	104.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.6	806	104.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.6	806	104.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			838.6	806	104.05	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.8	806	103.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.7	806	103.94	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.7	806	103.93	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.7	806	103.93	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.5	806	103.91	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			837.5	806	103.9	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.8	806	103.83	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.8	806	103.82	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.1	806	103.74	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			836.1	806	103.73	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.4	806	103.65	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.2	806	103.63	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			835.2	806	103.62	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			834.5	806	103.54	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.6	806	103.43	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			833.6	806	103.42	PLPL81/W30 Project and 230 kV study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.3	239	103.07	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			246.3	239	103.07	N. Lake Geneva Area Limitation
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			827.6	806	102.68	PLPL81/W30 Project and 230 kV study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1595.6	1554	102.68	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1595.6	1554	102.68	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			827.6	806	102.67	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.3	806	102.27	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.3	806	102.27	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.2	806	102.26	PLPL81/W30 Project and 230 kV study

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			824.2	806	102.26	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.6	806	102.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.6	806	102.06	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.4	806	102.03	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			822.4	806	102.03	PLPL81/W30 Project and 230 kV study
698867 RACINE5 138 699481 ST RITA 138 1			249.4	246	101.39	Elm Road/Oak Creek Outlet study
698867 RACINE5 138 699481 ST RITA 138 1			249.4	246	101.39	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.8	806	101.09	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 2			814.8	806	101.09	PLPL81/W30 Project and 230 kV study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1569.9	1554	101.03	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1569.8	1554	101.02	Elm Road/Oak Creek Outlet study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1			1018.7	1010	100.86	PLPL81/W30 Project and 230 kV study
695022 JUPITER 345 345 699247 ARCADIAN 345 345 1			1018.7	1010	100.86	PLPL81/W30 Project and 230 kV study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1554.6	1554	100.04	Elm Road/Oak Creek Outlet study
693481 MT PLEASANT 345 694119 RACINE BUS5 345 1			1554.6	1554	100.04	Elm Road/Oak Creek Outlet study

Table E12.4.2: Multiple Event Analysis “P6”, 2028 Light Load - Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Table E12.5.1: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”- Alterative 2, Thermal limitations

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			299.2	223	134.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			299.3	223	134.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			299.2	223	134.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			299.2	223	134.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			279.8	209	133.9	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			279.9	209	133.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			301.6	229	131.7	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			301.6	229	131.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.8	223	124.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.8	223	124.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			277.8	223	124.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			277.8	223	124.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.1	223	123.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			276.1	223	123.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276	223	123.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			276.1	223	123.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			258.2	209	123.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			258.2	209	123.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			256.5	209	122.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			256.5	209	122.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.9	223	122.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			272.9	223	122.39	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.9	223	122.38	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			272.9	223	122.38	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.1	229	122.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			280.1	229	122.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			278.4	229	121.58	N. Lake Geneva Area Limitation

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R 388.113. Not for public disclosure.

Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			278.4	229	121.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.4	209	121.24	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			253.4	209	121.24	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.3	229	120.2	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			275.3	229	120.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.7	266	119.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.7	266	119.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			318.5	266	119.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.9	223	119.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			265.8	223	119.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			265.8	223	119.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.9	223	118.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316	266	118.8	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.9	223	118.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.9	223	118.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			316	266	118.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.4	266	118.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.4	266	118.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.1	266	118.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			315.1	266	118.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.2	223	118.46	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			264.1	223	118.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.1	223	118.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			264.1	223	118.44	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.6	209	117.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			246.5	209	117.96	N. Lake Geneva Area Limitation

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Monitored Element				First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138	138	699086 ELK 138	138 1			312.9	266	117.63	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			312.9	266	117.63	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			245.6	209	117.51	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			245.6	209	117.51	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			312.1	266	117.31	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			312	266	117.31	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			244.9	209	117.17	N. Lake Geneva Area Limitation
698879 SGR CK4	138	699360 NLK GV T	138 1			244.9	209	117.16	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			268.2	229	117.11	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			268.2	229	117.1	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.3	229	116.71	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			267.2	229	116.7	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.5	229	116.37	N. Lake Geneva Area Limitation
698883 WHTWTR5	138	699516 BLUFFCRK	138 1			266.5	229	116.36	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			308.2	266	115.87	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			308.2	266	115.87	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			308.1	266	115.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			308.1	266	115.83	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			307.7	266	115.7	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			307.7	266	115.69	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			307.2	266	115.49	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			307.2	266	115.48	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			306.9	266	115.38	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			306.9	266	115.37	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.7	266	114.94	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.7	266	114.94	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.3	266	114.77	N. Lake Geneva Area Limitation
699085 NLG 138	138	699086 ELK 138	138 1			305.3	266	114.76	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			305.3	266	114.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			305.3	266	114.76	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.7	266	114.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.6	266	114.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.6	266	114.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.6	266	114.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.5	266	114.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.6	266	114.49	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.4	266	114.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.4	266	114.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.3	266	114.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			304.3	266	114.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.99	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			303.2	266	113.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.9	223	113.86	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.85	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253.9	223	113.85	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.8	266	113.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.8	266	113.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.73	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.5	266	113.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.59	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			302.1	266	113.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.9	266	113.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.9	266	113.49	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253.1	223	113.48	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			253	223	113.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253	223	113.47	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			253	223	113.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.6	266	113.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.6	266	113.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.5	266	113.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.5	266	113.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			301.3	266	113.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			252.3	223	113.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.3	223	113.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			252.3	223	113.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.8	266	113.07	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.6	266	113.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.5	266	112.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.4	266	112.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.83	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300.1	266	112.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300	266	112.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			300	266	112.79	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			299.9	266	112.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.9	266	112.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.4	223	112.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251.4	223	112.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.4	223	112.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251.4	223	112.72	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.7	266	112.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.8	266	112.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.6	266	112.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.5	266	112.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.4	266	112.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.4	266	112.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251	223	112.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			251	223	112.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251	223	112.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			251	223	112.54	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299.3	266	112.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.7	223	112.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.7	223	112.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.7	223	112.43	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.7	223	112.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299	266	112.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			299	266	112.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.38	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.9	266	112.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.2	223	112.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.2	223	112.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.2	223	112.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.2	223	112.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.5	209	112.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.4	266	112.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.2	223	112.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			234.5	209	112.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.1	223	112.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			250.1	223	112.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			250.1	223	112.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.3	266	112.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298.3	266	112.14	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298	266	112.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			298	266	112.02	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.2	229	111.9	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			256.2	229	111.89	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.82	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.4	266	111.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.6	209	111.79	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			233.6	209	111.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.3	223	111.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			249.3	223	111.78	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.2	223	111.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			249.3	223	111.77	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.2	266	111.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.7	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			297.1	266	111.69	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.4	229	111.52	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			255.4	229	111.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.5	223	111.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			248.5	223	111.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			248.5	223	111.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.4	266	111.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.4	266	111.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.4	266	111.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.4	266	111.42	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.8	209	111.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232.8	209	111.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.2	266	111.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296.1	266	111.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			296	266	111.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.7	229	111.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			254.7	229	111.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.9	223	111.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.9	223	111.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.9	223	111.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.9	223	111.15	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.9	223	111.15	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.8	223	111.14	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.8	223	111.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.8	223	111.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.5	266	111.08	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.6	223	111.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.3	266	111.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.6	223	111.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.5	223	111.01	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295.3	266	111.01	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.5	223	111	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232	209	111	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			232	209	111	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			231.9	209	110.95	N. Lake Geneva Area Limitation
699089 JAN 138 138 699141 TOWNLINE 138 1			231.9	209	110.95	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.91	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.9	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			295	266	110.89	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.3	223	110.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			247.3	223	110.88	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.2	223	110.87	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			247.2	223	110.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.7	229	110.8	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.7	229	110.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.75	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.6	266	110.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.4	209	110.74	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			231.4	209	110.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.9	223	110.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.9	223	110.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.9	223	110.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.9	223	110.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.8	223	110.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.8	223	110.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.8	223	110.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.8	223	110.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.3	229	110.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.2	209	110.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.3	229	110.62	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.2	209	110.62	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			706.8	639	110.62	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			706.8	639	110.61	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.6	223	110.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.6	223	110.59	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.1	209	110.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.6	223	110.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.6	223	110.58	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			231.1	209	110.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.6	223	110.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.1	266	110.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.6	223	110.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294.1	266	110.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.5	223	110.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.5	223	110.55	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.5	223	110.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.5	223	110.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.5	223	110.53	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294	266	110.52	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			294	266	110.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.4	223	110.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.1	229	110.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			246.4	223	110.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			253.1	229	110.51	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.4	223	110.5	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			246.4	223	110.5	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.7	266	110.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.7	266	110.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.7	209	110.37	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			230.7	209	110.37	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.34	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			293.5	266	110.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.6	229	110.29	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.28	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			252.5	229	110.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.6	223	110.13	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.6	223	110.12	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			245.6	223	110.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			245.5	223	110.1	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229.7	209	109.92	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			229.7	209	109.92	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.6	229	109.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			251.6	229	109.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229	209	109.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			229	209	109.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.55	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.9	229	109.54	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.9	209	109.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.9	209	109.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.9	209	109.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228.8	209	109.48	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			271.1	248	109.33	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			271.1	248	109.32	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.2	229	109.27	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.2	229	109.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.2	229	109.25	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			250.1	229	109.23	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.7	248	109.16	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			270.7	248	109.16	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			697.3	639	109.12	Cypress Area 345 kV Uprate study
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.9	229	109.12	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.9	229	109.12	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			697.3	639	109.12	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.11	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			228	209	109.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			243.1	223	109.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			243.1	223	109.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.6	229	108.99	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.6	229	108.99	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.7	209	108.97	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.7	209	108.97	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.3	229	108.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.3	229	108.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.4	209	108.81	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.4	209	108.81	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.1	229	108.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			249.1	229	108.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.3	209	108.75	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.3	209	108.75	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.71	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.68	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.67	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.9	229	108.67	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.1	209	108.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.8	229	108.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227.1	209	108.66	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.8	229	108.66	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.8	229	108.64	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			248.8	229	108.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.63	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			227	209	108.61	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.3	248	108.6	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			269.3	248	108.6	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.9	209	108.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.9	209	108.57	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.8	209	108.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.8	209	108.51	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.8	209	108.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.8	209	108.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.6	209	108.43	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			226.6	209	108.4	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.9	229	108.26	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			247.9	229	108.24	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	108	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	107.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			240.8	223	107.98	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			240.8	223	107.97	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.7	248	107.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.7	248	107.95	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.4	248	107.81	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			267.4	248	107.8	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			285.8	266	107.46	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.27	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			224.2	209	107.27	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.9	248	107.22	N. Lake Geneva Area Limitation
698090 BOL 138 138 699086 ELK 138 138 1			265.9	248	107.22	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			245.4	229	107.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.5	266	106.94	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			284.4	266	106.93	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			283.8	266	106.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.9	266	106.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.8	266	106.32	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.6	266	106.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282.6	266	106.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.9	209	106.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.18	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			243.1	229	106.16	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			221.9	209	106.16	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.6	223	106.11	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.6	223	106.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.6	223	106.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.6	223	106.09	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			282	266	106.02	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.4	223	106	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.4	223	106	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.99	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			236.3	223	105.97	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.96	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			236.3	223	105.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			281.7	266	105.9	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.8	223	105.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.8	223	105.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.8	223	105.73	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.8	223	105.72	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.5	223	105.59	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			235.5	223	105.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.4	223	105.58	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			235.4	223	105.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.46	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.5	266	105.45	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.4	266	105.41	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			280.1	266	105.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.23	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.22	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.9	266	105.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.8	266	105.18	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.6	266	105.12	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.6	266	105.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	105	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.3	266	104.99	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			279.2	266	104.96	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.1	266	104.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			279.1	266	104.91	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.3	223	104.61	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			233.3	223	104.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.3	223	104.6	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			233.2	223	104.58	N. Lake Geneva Area Limitation
693580 CYPRESS 345 695059 MILL RD B8 345 1			667.6	639	104.48	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 695059 MILL RD B8 345 1			667.6	639	104.47	Cypress Area 345 kV Uprate study
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.9	223	104.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			232.9	223	104.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.9	223	104.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			232.9	223	104.44	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.9	229	104.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.9	229	104.34	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.7	229	104.23	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.6	229	104.21	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.6	229	104.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.9	266	104.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.8	266	104.06	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.1	229	103.98	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			238.1	229	103.98	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.93	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.2	209	103.92	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			276.4	266	103.92	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			217.2	209	103.91	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.8	229	103.84	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			237.8	229	103.83	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.8	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.78	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.9	209	103.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			231	223	103.57	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.9	223	103.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.9	223	103.56	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.9	223	103.55	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.9	223	103.54	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.9	223	103.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.9	223	103.53	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.52	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216.4	209	103.52	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.8	223	103.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.3	266	103.51	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			275.3	266	103.5	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216	209	103.36	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			216	209	103.36	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.5	223	103.35	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.5	223	103.34	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.4	223	103.33	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.4	223	103.33	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.6	266	103.22	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.1	223	103.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.5	266	103.2	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.1	223	103.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			230.1	223	103.18	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			274.4	266	103.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			230.1	223	103.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.4	266	103.17	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.9	223	103.1	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			229.9	223	103.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.9	223	103.09	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			229.9	223	103.08	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.04	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			274.1	266	103.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.6	229	102.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.6	229	102.86	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.79	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			273.4	266	102.78	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.2	229	102.73	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			235.3	229	102.73	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.5	209	102.61	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			214.4	209	102.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.8	266	102.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.8	266	102.56	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.6	266	102.48	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.6	266	102.47	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.5	266	102.43	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.4	266	102.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			233.5	228	102.42	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			233.4	228	102.39	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.3	266	102.38	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.35	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			272.2	266	102.34	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.1	223	102.3	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			228.1	223	102.29	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.1	223	102.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			228.1	223	102.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.9	266	102.21	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.9	266	102.21	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.9	223	102.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227.9	223	102.19	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.9	223	102.18	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			227.9	223	102.18	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.5	209	102.17	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			213.5	209	102.16	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.4	266	102.02	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			271.4	266	102.01	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.3	229	101.87	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.3	229	101.86	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.2	229	101.85	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			233.2	229	101.83	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227	223	101.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			227	223	101.78	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.9	223	101.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.8	223	101.68	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.7	223	101.67	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			226.7	223	101.66	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			226.7	223	101.65	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.8	229	101.64	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.8	229	101.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.56	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			270.1	266	101.54	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.5	229	101.51	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.4	229	101.5	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.41	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			232.2	229	101.4	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.9	223	101.28	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.27	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.26	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			225.8	223	101.26	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.25	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			225.8	223	101.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.6	209	101.23	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.22	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			211.5	209	101.2	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.2	266	101.19	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.17	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			269.1	266	101.15	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.11	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			268.9	266	101.1	N. Lake Geneva Area Limitation
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.2	209	101.07	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
693462 BOC GAS TAP 138 699141 TOWNLINE 138 1			211.2	209	101.07	N. Lake Geneva Area Limitation
693580 CYPRESS 345 694018 FORST JT B5 345 1			665.1	659	100.93	Cypress Area 345 kV Uprate study
693580 CYPRESS 345 694018 FORST JT B5 345 1			665.1	659	100.92	Cypress Area 345 kV Uprate study
698879 SGR CK4 138 699360 NLK GV T 138 1			210.8	209	100.87	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.8	209	100.86	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.8	209	100.84	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			210.8	209	100.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			229.9	228	100.84	N. Lake Geneva Area Limitation
699085 NLG 138 138 699360 NLK GV T 138 1			229.9	228	100.81	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.8	223	100.79	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.7	223	100.77	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.7	223	100.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.7	223	100.76	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.7	223	100.75	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.6	223	100.74	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.7	223	100.74	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.69	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.8	266	100.69	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224.5	223	100.65	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.65	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.64	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224.4	223	100.64	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699085 NLG 138 138 699086 ELK 138 138 1			267.7	266	100.63	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.4	229	100.62	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.4	229	100.62	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.61	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.6	266	100.6	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.58	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.5	266	100.57	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.2	229	100.53	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			230.2	229	100.53	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			224	223	100.45	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.44	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			224	223	100.44	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			267.1	266	100.4	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.29	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.8	266	100.28	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.25	N. Lake Geneva Area Limitation
699085 NLG 138 138 699086 ELK 138 138 1			266.7	266	100.25	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.3	209	100.14	N. Lake Geneva Area Limitation
698879 SGR CK4 138 699360 NLK GV T 138 1			209.3	209	100.14	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.3	229	100.13	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.3	229	100.12	N. Lake Geneva Area Limitation

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Monitored Element	First Level Contingency	Second Level Contingency	Cont Flow	Rate B (MVA)	Final AC %Loading	Comment
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.05	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.1	223	100.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.1	223	100.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699516 BLUFFCRK 138 1			223.1	223	100.04	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.1	223	100.03	N. Lake Geneva Area Limitation
699429 BCR_LNG_TAP 138 699488 SGR CK5 138 1			223.1	223	100.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229.1	229	100.03	N. Lake Geneva Area Limitation
698883 WHTWTR5 138 699516 BLUFFCRK 138 1			229	229	100.01	N. Lake Geneva Area Limitation

Table E12.5.2: Multiple Event Analysis “P6”, 2028 Shoulder Sensitivity “Elm Road Unit Out”– Alterative 2, Voltage limitations

Bus #	Bus Name	Base kV	First Level Contingency	Second Level Contingency	Cont Voltage	Comment
						No results met the criteria threshold.

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Appendix F: Economic Analysis Results

Table F.1: Economic Congestion Annual Total Hours of Occurrence

Constraint	Contingency	Model Year			Potential Fix
		2032	2037	2042	
NLG 138 699085 ALTE NLK GV T 699360 WEC		1,816	2,895	337	LRTP Tranche 2
MUKWONGO 699357 WEC UNVRSTY 699512 WEC		2,190	2,501	461	LRTP Tranche 2
CYPRESS 693580 WEC MILLRD345 694129 WEC		2,246	1,889	1,121	Under study
BOL 138 698090 ALTE ELK 138 699086 ALTE		2,211	1,006	545	Under study
JEFRSN5 698884 WEC CRWFSH R 699375 WEC		1,199	1,801	926	Under study
ZION STA ; R270941 COMED PLS PR1 699432 WEC		956	1,397	277	Under study
MILLRD345 694129 WEC ARCADIAN 345699247 WEC		1,215	1,219	935	LRTP Tranche 2
ZION EC ;RP274817 COMED PLS PR1 699432 WEC		674	982	215	Under study
CEDRSAUK B4 694007 WEC EDG BUS2 694009 ALTE		678	832	613	Under study
SUN 138 698095 ALTE LKHD TP 699950 WEC		768	801	325	LRTP Tranche 2
JEFRSN4 699340 WEC LKHD_CAM_TP 699349 WEC		0	563	43	LRTP Tranche 2
NLG 138 699085 ALTE NLK GV T 699360 WEC		555	541	53	Under study
MT PLEASANT 693481 WEC RACINE BUS5 694119 WEC		413	0	216	Under study
COONEY 699293 WEC SUMMIT3 699470 WEC		106	404	30	Under study
CS3T 69 698217 ALTE COS 69 698219 ALTE		347	252	239	LRTP Tranche 2
PLY #5 TP N 699198 WEC MUR WEST T S699417 WEC		159	324	181	LRTP Tranche 2
MT PLEASANT 693481 MSL RACINE BUS5 694119 WEC		0	304	0	Under study
ROE 138 699120 ALTE LKHD_CAM_TP 699349 WEC		277	109	7	LRTP Tranche 2
SUN 138 698095 ALTE LKHD TP 699950 WEC		214	274	40	LRTP Tranche 2
COR 138 699060 ALTE DIK 138 699061 ALTE		253	266	53	LRTP Tranche 2
EDG BUS1 694008 ALTE SFL 345 B2 694070 ALTE		67	114	212	Under study
BLT GTW 693549 ALTE DIK 138 699061 ALTE		157	193	81	LRTP Tranche 2
COR 138 699060 ALTE MRE 138 699062 ALTE		28	75	134	LRTP Tranche 2

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ROE 138 699120 ALTE LKHD_CAM_TP 699349 WEC		33	56	0	LRTP Tranche 2
ROR 138 699047 ALTE TOWNLINE 699141 ALTE		18	22	11	LRTP Tranche 2
CEDRSAUK B4 694007 WEC EDG BUS2 694009 ALTE		0	13	5	Under study
WEMPLETOW; R270919 COMED PAD 345 699058 ALTE		0	0	11	LRTP Tranche 2

Table F.2: Economic Model Losses

PROMOD Model Year	Maximum Loss MW	Loss GWH
2032	502	2,577
2037	501	2,572
2042	518	2,156