Invenergy

Engineering Plan for the Forest Junction & Union Depot Energy Centers

Calumet County, Wisconsin

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AC	Alternating Current
ATC	American Transmission Company
BACT	Best Available Control Technology
BMPs	Best Management Practices
BOP	Balance of Plant
CCCW	Closed Cycle Cooling Water
CEMS	Continuous Emissions Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COD	Commercial Operation Date
CPCN	Certificate of Public Convenience and Necessity
ECSWMP	Erosion Control and Stormwater Management Plan
ERR	Endangered Resource Review
FEMA	Federal Emergency Management Agency
GE	General Electric
GCB	Generator Circuit Breaker
GIA	Generator Interconnection Agreement
gpd	Gallons Per Day
gpm	Gallons Per Minute
gr	Grains
GSU	Generator Step-Up
GTG	Gas Turbine Generator
HAP	Hazardous Air Pollutant
Hz	Hertz
IPaC	Information for Planning and Consultation
kV	Kilovolt
LCI	Load Commutating Inverter
MVA	Megavolt-amperes
MW	Megawatt
MWD	Mobile Water Demineralization
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NH_3	Ammonia
NNG	Northern Natural Gas

NO_x	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
NSPS	New Source Performance Standards
OEM	Original Equipment Manufacturer
OWS	Oil Water Separator
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns
$PM_{2.5}$	Particulate Matter less than 2.5 microns
PSCW	Public Service Commission of Wisconsin
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
rpm	Revolutions Per Minute
SCF	Standard Cubic Feet
SER	Significant Emissions Rates
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
tpy	Tons Per Year
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WDNR	Wisconsin Department of Natural Resources
WPDES	Wisconsin Pollutant Discharge Elimination System
WPS	Wisconsin Public Service

1. Introduction

Forest Junction Energy Center LLC ("Forest Junction") and Union Depot Energy Center LLC ("Union Depot") (together the "Applicants"; each an "Applicant"), are preparing to submit an application for a Certificate of Public Convenience and Necessity ("CPCN") to the Public Service Commission of Wisconsin ("PSCW") to construct and place in service the Forest Junction Energy Center ("FJEC") and Union Depot Energy Center ("UDEC") (together, the "Projects"; each a "Project"). The FJEC includes a natural gas-fired simple-cycle combustion turbine-based large electric generating facility ("Simple Cycle Facility") that will generate up to 1,203 megawatts ("MW") alternating current ("AC"). The UDEC includes a natural gas-fired combined-cycle combustion and steam turbine-based large electric generating facility ("Combined Cycle Facility") that will generate up to 750 MW AC. Together, the Simple Cycle Facility and Combined Cycle Facility are the "Facilities". The Simple Cycle Facility will connect to the regional electric grid via three 345 kilovolt ("kV") overhead generator transmission tie lines ("Gen-Tie Lines"). The Combined Cycle Facility will connect to the regional electric grid via one 345 kV Gen-Tie Line.

Invenergy is North America's largest privately held developer, owner, and operator of independent power infrastructure. Over its 25-year history, Invenergy has successfully developed over 220 power infrastructure projects totaling more than 36 gigawatts of capacity across natural gas, wind, solar, energy storage, and transmission technologies. Through decades of experience and trusted execution, Invenergy is accelerating the delivery of reliable, affordable energy for customers and communities.

In accordance with Wis. Stat. § 196.491(3)(a)3a, Applicants submit this Engineering Plan to the Wisconsin Department of Natural Resources ("WDNR") at least 60 days before submitting an application for a CPCN to the PSCW. Within 30 days of receiving this Engineering Plan, Applicants request that WDNR, based on the information contained herein, provide a list of all permits and approvals required to construct the Projects.

All distances, dimensions, quantities, and descriptions contained within this Engineering Plan are preliminary and subject to change based on final engineering design and equipment selection.

2. Project Description

2.1 Project Overview

In compliance with Wis. Admin. Code § PSC 4.70(2)(b)1 and § PSC 111.53(1)(f), Applicants have identified Proposed and Alternative Sites for the Facilities. The Proposed Site is located in the Town of Brillion, Calumet County, Wisconsin. The Alternative Site is located in the Town of Woodville, Calumet County, Wisconsin.

The Simple Cycle Facility will include five General Electric ("GE") 7F.05 gas turbines and H35 electric generators. Although the Simple Cycle Facility will be designed for continuous service, Forest Junction anticipates it will primarily operate during periods of peak electrical demand. The Combined Cycle Facility will include one General Electric ("GE") 7HA.03 gas turbine and H84 electrical generator, one heat recovery steam generator ("HRSG"), and one steam turbine generator ("STG") consisting of a GE D600 steam turbine and an H53 electric generator. The

Combined Cycle Facility will be designed for continuous operation and is expected to operate as a combined-cycle generating resource providing energy and capacity to the regional transmission system. Certain facilities may be shared between the Projects, including common infrastructure such as access roads, natural gas interconnection infrastructure, electrical interconnection infrastructure, water treatment and supply systems, and other balance-of-plant ("BOP") equipment.

The Proposed Site will connect to the transmission system via Gen-Tie Lines greater than one mile in length; therefore, alternative routing for the Proposed Site Gen-Tie Lines will be provided for consideration. The Alternative Site will connect to the transmission system via Gen-Tie Lines less than one mile in length; therefore, alternative routing for the Alternative Site Gen-Tie Lines is not required. Preliminary locations of the Proposed and Alternative Sites and Gen-Tie Lines are provided in **Exhibit 1**. Adjustments to the locations of the Proposed and Alternative Sites and Gen-Tie Lines within their respective Proposed and Alternative Project Areas are expected depending on final site control and design.

2.2 Major Equipment and Systems

A general diagram of the simple-cycle generating process is provided in Figure 1. A general diagram of the combined-cycle generating process is provided in

Figure *2*. Preliminary arrangement schematics of the Facilities are provided in **Exhibit 2**.

Figure 1 Simple-Cycle Generating Process

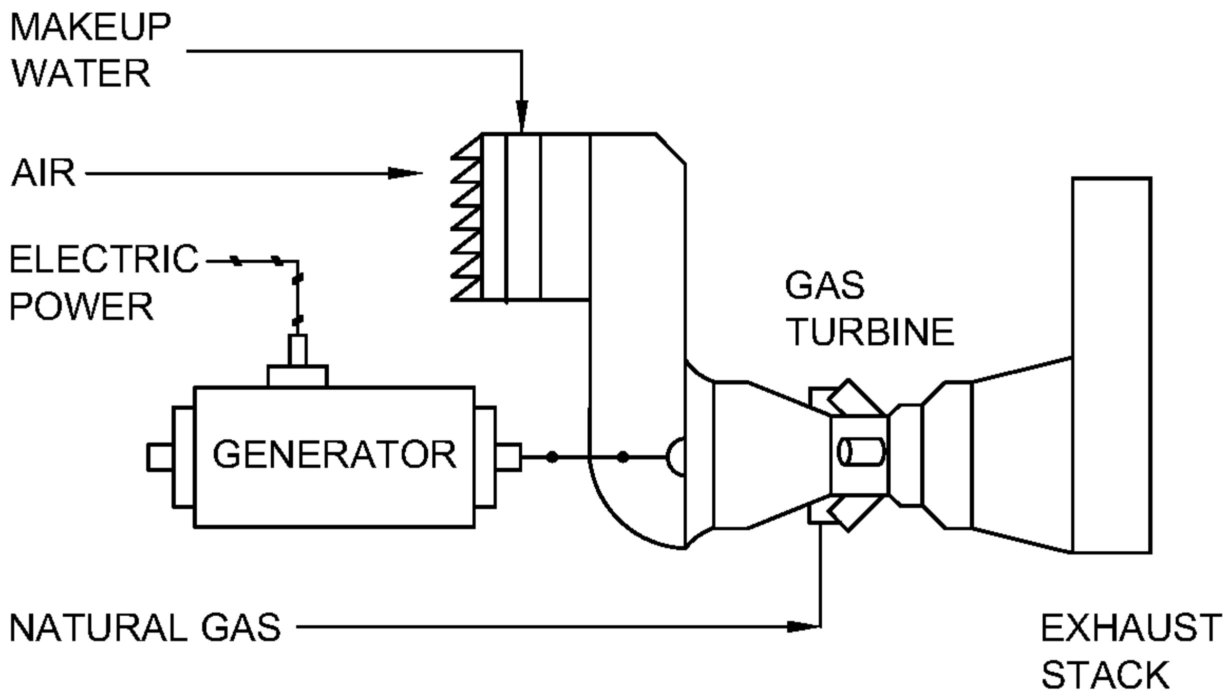
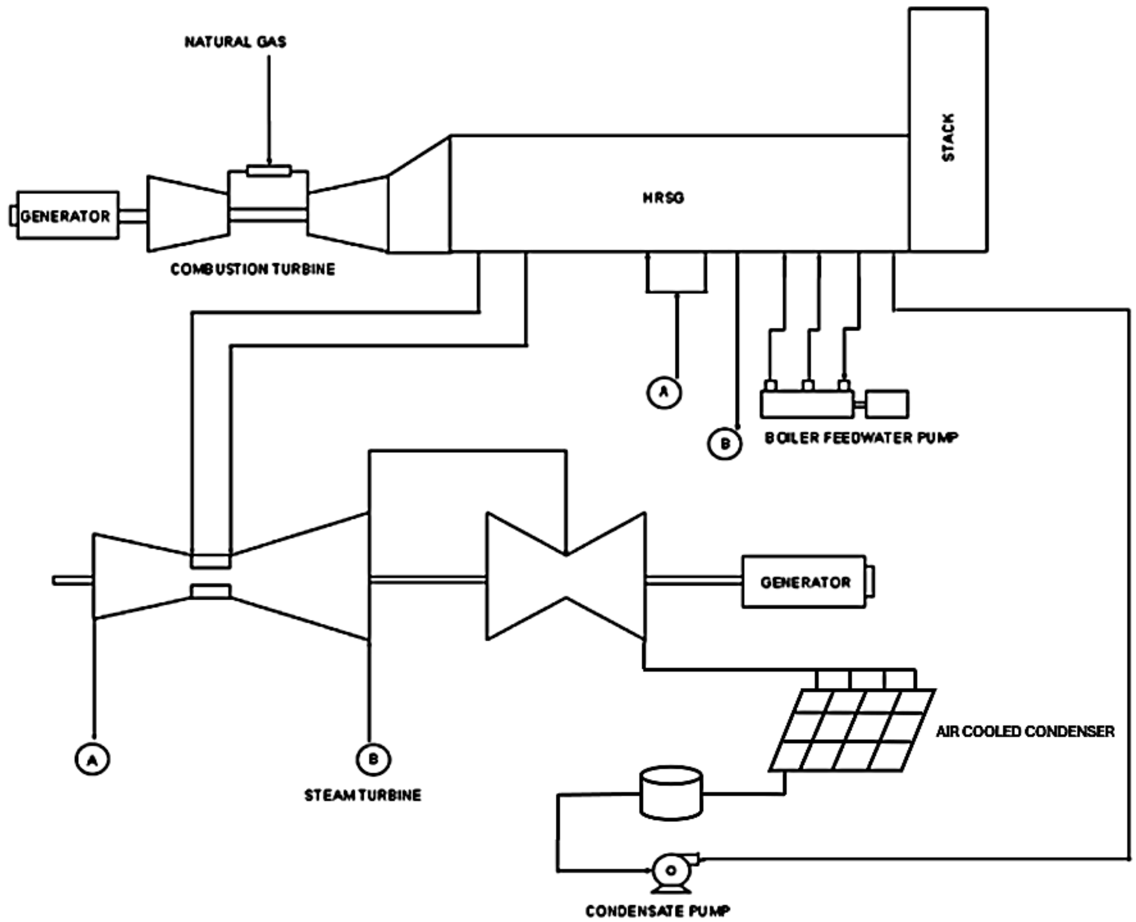


Figure 2 Combined-Cycle Generating Process



2.2.1 Gas Turbine Generators

The Simple Cycle Facility will include five gas turbine generators ("GTG"). Each GTG will consist of an F-class gas turbine coupled to an H35 electric generator driven at 3,600 revolutions per minute ("rpm"). The Combined Cycle Facility will utilize one GTG. The GTG will consist of an H-class gas turbine coupled to an H84 electric generator drive at 3,600 rpm. For all GTG, ambient air will be drawn into the compressor section of the gas turbine, passing through an inlet filter and evaporative cooler. During warm weather, the evaporative cooler will decrease the temperature and increase the density of inlet air, which will enhance the electrical generating capacity of the gas turbine. During cold weather, heat from turbine bleed will warm inlet air and prevent icing. The compressor section of the gas turbine will compress the inlet air and convey it to the combustion section. There, fuel will be introduced and combustion will occur. Dry low nitrogen oxide ("NO_x") combustors will minimize NO_x formation while firing natural gas. The expansion of the combustion products will actuate a multi-stage power turbine, producing the energy that drives the compressor and the generator. Exhaust gas will pass through a silencer and exhaust stack.

The main features of each gas turbine are:

- Compressor section;
- Turbine section;
- Combustion (Dry low-NO_x combustors or DLN2.6+);

- Fuel system (natural gas only);
- Lubrication and hydraulic systems;
- Cooling (closed loop) water systems;
- Inlet system (with evaporative coolers);
- Starting systems;
- Exhaust stack with emission compliance systems;
- Compressor cleaning systems (water wash skids);
- Advanced turbine and combustion control systems; and
- Fire protection system.

The main features of each generator are:

- Electrical ratings (MW, MVA, kV, power factor, Hertz (“Hz”))
- Temperature detectors on generator stator windings;
- Packaging (three-phase, synchronous 60 Hz machine);
- Terminal arrangement (excitation end of generator);
- Stator frame fabrication;
- Ventilation (generator is cooled by an internally recirculating H_2 stream that dissipates generator heat through H_2 gas-to-water heat exchange);
- Rotor;
- End shield bearings;
- Hydrogen control panel and manifold;
- Carbon dioxide control manifold (CO_2 for purging the generator casing of air before admitting H_2);
- Detraining system;
- Collection assembly;
- Generator terminal enclosure;
- Load Commutating Inverter (“LCI”) / Excitation compartment;
- 272.9 megavolt-amperes (“MVA”) capacity (Simple Cycle Facility GTG) or 712 MVA capacity (Combined Cycle Facility GTG);
- Two-pole field (3,600 rpm); and
- 18 kV Output voltage (Simple Cycle Facility GTG) and 24 kV (Combined Cycle Facility GTG).

2.2.2 Heat Recovery Steam Generator

The Combined Cycle Facility will include one HRSG designed to recover thermal energy from the exhaust gases of the gas turbine and convert that energy into steam for use in the STG. The HRSG will be integrated with the combined-cycle system and will be designed to efficiently capture heat from the gas turbine exhaust stream.

The HRSG will consist of a multi-pressure steam generation system that utilizes exhaust heat from the gas turbine to produce steam at multiple pressure levels. The HRSG will include heat exchange surfaces such as economizers, evaporators, superheaters, and reheaters to transfer heat from the gas turbine exhaust gases to the feedwater and steam systems.

Exhaust gas from the gas turbine will enter the HRSG through inlet ductwork and flow across the HRSG heat transfer surfaces. As the exhaust gas passes through the HRSG, thermal energy will be transferred to the water and steam circuits, producing steam that will be supplied to the STG. After heat recovery, the exhaust gas will exit the HRSG through the exhaust stack.

The main features of the HRSG include:

- Multi-pressure steam generation system;
- Economizer, evaporator, superheater, and reheater heat exchange sections;
- Inlet and outlet exhaust ductwork connecting the gas turbine and exhaust stack;
- Structural steel supports and access platforms;
- Feedwater and steam piping systems; and
- Instrumentation and control systems integrated with the facility control system.

The HRSG will also incorporate emissions control technologies designed to reduce air pollutant emissions from the gas turbine exhaust stream. Emissions control technologies will be incorporated within the HRSG process train at thermally optimized locations to maximize emissions reduction performance.

The emissions control components of the HRSG include:

- Selective catalytic reduction ("SCR") system for reduction of NO_x emissions;
- Ammonia injection grid and associated ammonia handling and storage systems used for SCR operation, utilizing 19% aqueous ammonia (or similar product) stored on site;
- Carbon monoxide ("CO") oxidation catalyst system; and
- Continuous emissions monitoring system ("CEMS") located at the HRSG exhaust stack to monitor emissions of NO_x, CO, and oxygen (O_2).

The HRSG will be designed to accommodate flexible plant operation, including startup, shutdown, and load-following conditions associated with combined-cycle power plant operation.

2.2.3 Steam Turbine Generator

The Combined Cycle Facility will include one STG designed to convert thermal energy recovered from the gas turbine exhaust into additional electrical generation as part of the combined-cycle power generation process. The STG will consist of a GE D602 reheat steam turbine coupled to a synchronous H53 electric generator. The steam turbine will convert the thermal energy contained in high-pressure steam produced by the HRSG into rotational mechanical energy that drives the generator.

The D602 steam turbine is designed for combined-cycle service and includes high-pressure, intermediate-pressure, and low-pressure turbine sections. Steam will expand through the turbine stages, causing the turbine rotor to rotate. The turbine rotor will be directly coupled to the generator rotor, enabling mechanical energy to be converted into electrical energy.

The H53 generator will operate at approximately 3,600 rpm, produce electrical power at 60 Hz with a capacity of 408 MVA, and deliver power at 18kV.

The main features of the steam turbine include:

- High-pressure, intermediate-pressure, and low-pressure turbine sections;
- Reheat steam cycle configuration;
- Single-shaft turbine rotor assembly;
- Steam turbine casing designed for high-temperature and high-pressure operation;
- Hydraulic turbine control valves and governing system;
- Lubrication oil system;
- Turning gear system for turbine startup and shutdown;
- Integrated turbine control and protection systems; and
- Vibration monitoring and condition monitoring systems.

The main features of the generator include:

- Synchronous three-phase generator operating at 60 Hz;
- 408 MVA capacity;
- Hydrogen-cooled generator rotor and stator;
- Excitation system and voltage regulation controls;
- 18 kV Output voltage
- Generator protection and monitoring systems; and
- Generator terminal enclosure and electrical connection systems.

An auxiliary boiler may be installed to increase the speed of the STG startup process. The boiler would produce approximately 100,000 lb/hr of steam.

2.2.4 Facility Electrical Systems

The Simple Cycle Facility GTG will have an output of 18 kV. The Combined Cycle Facility GTG will have an output of 24 kV. The Combined Cycle Facility STG will have an output of 18 kV. Each generator will connect to a generator step-up (“GSU”) transformer with a Generator Circuit Breaker (“GCB”) between them. The GSU transformers will step up the voltage to 345 kV to match the transmission system at the point of interconnection. Each generator will have its own 345 kV circuit breaker to protect and isolate the generator during maintenance or fault conditions. Auxiliary power will be supplied by the GTG through unit auxiliary transformers. The auxiliary power supply system will distribute electricity at lower voltages to auxiliary equipment, including pumps, fans, and control systems. Weather-resistant enclosures will enhance long-term reliability by shielding electrical equipment from environmental elements.

2.2.5 Standby Backup Generator

The Facilities will each include one to two standby backup generators, which in the event of a loss of primary power supply, will provide auto-start and backup power to essential systems. Each standby backup generator will have a generating capacity of approximately 2,500 kW and utilize natural gas as fuel.

2.2.6 Emergency Firewater Pump

Should firewater be required, an emergency firewater pump will supply water to the fire protection system using an electric motor.

2.2.7 Fuel Supply System

The Facilities will be fueled by pipeline-quality natural gas and will not include backup fuel capability. Conditioning equipment may be installed to protect the system and maintain fuel requirements. The conditioning equipment may include a compression station, regulation trains, duplex filter separators, dew point heaters, coalescing filters, a final pressure control skid, and final coalescing filters. Overpressure protection will safeguard the system, and duplex filter separators will enhance filtration efficiency. The dew point heater will regulate fuel temperature and prevent condensation. The final pressure control skid will provide stable pressure regulation, and final coalescing filters will ensure high fuel purity. A gas chromatograph may be utilized to monitor supply at the gate station. Additional gas compression may be used due to lower minimum gas pressure guarantees. A liquid scrubber may also be included downstream of the compressors to ensure protection from entrained lube oil in the pipeline created by compressor failure.

Applicants each expect to negotiate a Gas Supply Agreement with Wisconsin Public Service Corporation ("WPS") to supply natural gas to the Facilities. WPS will be responsible for all activities required for the planning, construction, and operation of the natural gas pipelines and associated metering and interconnection facilities, including studies, evaluations, permits, and regulatory notifications.

2.2.8 Closed Cycle Cooling Water System

A closed cycle cooling water ("CCCW") system will be installed for each gas turbine and will consist of air-cooled heat exchangers, pumps, an expansion head tank, and a chemical feeder. The CCCW system will circulate a propylene glycol/water mixture with a corrosion inhibitor to supply cooling water to equipment and reject waste heat to the atmosphere.

2.2.9 Compressed Air System

Compressed air will be used for instrumentation, controls, and service air systems. The compressed air system will consist of compressors, inlet filters, after cooler, pressure dampening, air receiver tanks, controls, automatic condensate traps, valves, air-dryers, piping, storage tanks, and protection devices. The compressed air system will be sized according to the total capacity, pressure, and quality requirements for the Facilities. Compressors automatically control motor starting and capacity output to maintain adequate system pressure and avoid overloading the power system.

2.2.10 Exhaust and Emissions Control System

The exhaust and emissions control system will ensure compliance with regulatory air emission limits. Best available control technology ("BACT") will be implemented, which may include some or all of the following control technologies being installed on the Simple Cycle and/or Combined Cycle Facilities, as will be finally determined in the air permit:

- Low-NO_x Combustors
  - The gas turbines will be equipped with dry low-NO_x combustors to minimize the formation of NO_x.
- Continuous Emissions Monitoring System (CEMS)

  - The CEMS will continuously monitor and record emissions of applicable pollutants, as specified in the air permit.
- Carbon Monoxide and Volatile Organic Compound ("VOC") Emissions Control
  - Advanced combustion controls and optimization strategies will be employed to minimize incomplete combustion, thereby reducing CO and VOC emissions.
- Startup and Shutdown Procedures
  - Specific operating procedures will be implemented during startup and shutdown to minimize transient emissions of NO_x, CO, and other pollutants.
- Selective Catalytic Reduction (SCR)
  - A catalyst will be installed on the HRSG that reduces NO_x concentration in the combined-cycle gas turbine exhaust.
- Oxidation Catalyst
  - A catalyst will be installed on the combined-cycle gas turbine that reduces emissions of CO, VOC, and other pollutants.

2.2.11 Lubricating Oil System

The lubricating oil system will circulate oil to control and lubricate bearings and other GTG components. The lubricating oil system will consist of lubrication oil pumps, hydraulic pumps, filters, coolers (oil-to-coolant heat exchanger), mist elimination, oil reservoirs, piping, instrumentation, and control systems. Each GTG will include its own accessory module that houses a lubrication oil reservoir and pumping system. The lubrication oil reservoir will be located in a containment area for spill prevention.

2.2.12 Water Wash System

A water wash system will maintain performance by periodically cleaning the gas turbine compressor blades. The water wash system will consist of a water storage tank, detergent storage tank, pumps, piping, instrumentation, and controls.

2.2.13 Water Supply System

Service water and demineralized water will be required to operate and maintain the Facilities. Water will be supplied to the Facilities by one or more new high-capacity wells. The water supply system will include water treatment systems, redundant pumps, storage capacity, instrumentation, and control to ensure operational reliability. The Facilities will include an approximately 750,000-gallon service water storage tank, 400,000-gallon demineralized water storage tank, 30,000-gallon condensate tank, and 2,000-gallon potable water storage tank.

The water supply system will distribute low-pressure water throughout the Facilities for the following uses:

- Demineralized water treatment system;
- Gas turbine evaporative cooling system makeup;
- Gas turbine water wash for compressor section;
- Fire protection system supply;
- Steam turbine steam cycle make-up water;
- Boiler blowdown quench water;
- Miscellaneous hose stations for maintenance washdown; and

- Domestic water for lavatories and other uses.

The water supply system will be efficiently designed to minimize wastewater. To generate demineralized high purity water, the Facilities will implement advanced water treatment technologies, such as nano filtration, reverse osmosis, electrodialysis, and/or mixed bed ion exchange. The water supply system design will include back-flow prevention devices to separate the process users from the potable users.

Peak water usage of the Facilities will be approximately 550 gallons per minute ("gpm") (up to 792,000 gallons per day ("gpd")). The Facilities are not expected to function at peak usage for a full 24-hour period. Approximately 365 gpm may be used for gas turbine evaporative cooling which will only be utilized during warmer temperatures. Other primary water uses include boiler blowdown quench water (approximately 55 gpm), steam cycle make up water (approximately 35 gpm) and service water (approximately 3 gpm). The remaining volume will be discharged as reject from the water treatment process. Evaporative cooling water will be recycled before being blown down into the wastewater storage tank for discharge from the site. The Facilities will be designed to minimize wastewater and maximize efficiency of demineralized water production and usage. Preliminary water balance diagrams for the Facilities identifying inflows, reuse pathways, effluent losses, and outfall pathways are provided in **Exhibit 3**.

2.2.14 Wastewater Disposal

The Facilities will have process, sanitary, and stormwater discharge streams. Wastewater discharges will be handled and disposed of in accordance with WDNR permits and all other applicable regulations.

2.2.14.1 Process Wastewater

Process wastewater will be from evaporative cooler blowdown, reject water from the water/wastewater treatment process, steam cycle blowdown, and treated Oil Water Separator ("OWS") effluent. The maximum estimated process wastewater discharge from the Facilities will be approximately 250 gpm (approximately 360,000 gpd). The majority of this discharge, approximately 180 gpm, will originate from the reject stream of the water treatment process. Approximately 65 gpm will originate from evaporative cooler blowdown, which will only occur during warmer weather. When the evaporative coolers are not running, expected wastewater discharge will be approximately 125 gpm (approximately 180,000 gpd). The OWS is not anticipated to have routine flow, outside of accumulated stormwater from outdoor secondary containment structures. Any accumulated stormwater within the secondary containment will require visual inspection to ensure there are no signs of oil sheen or contamination prior to being directed to the OWS.

Wastewater from the raw water treatment system and boiler sumps will be directed to wastewater equalization tanks to blend and levelize the flow into the treatment system. The wastewater will be fully softened to minimize calcium and magnesium hardness while also reducing silica content. This softening process will utilize multiple reaction tanks to introduce lime, soda ash, coagulates, and flocculates to create softening solids and settle these solids in downstream clarifiers. The softened effluent of the clarifiers will be filtered through ultrafilters, and a cartridge filter prior to the use of a reverse osmosis system. The reverse osmosis system will recover approximately 90% of the wastewater while concentrating the constituents in the wastewater into the remaining 10% which will be hauled off site for disposal. The reverse osmosis effluent product could be considered for reuse, or discharge depending on site needs. The other waste streams from the wastewater treatment process will either be recycled to the head of the wastewater treatment system or be sent to a thickener/filter press system to produce a landfillable cake byproduct.

Compressor water-wash maintenance activities will be periodically performed and waste generated from this maintenance will be trucked off-site for disposal. If required for operational redundancy, the Facilities may utilize Mobile Water Demineralization (“MWD”) trailers to condition supply service water to produce demineralized water. The trailers contain media that require routine off-site disposal of regeneration waste to ensure performance of the demineralization process. This process will not result in any wastewater discharge from the site.

The Facilities will include an approximately 80,000-gallon wastewater storage tank, primarily for equalization prior to discharge. The wastewater storage tank will receive evaporative cooler blowdown, reject from the water treatment process, and boiler blowdown quench water, which will be directed to the stormwater management basin contingent on compliance with Wisconsin Pollutant Discharge Elimination System (“WPDES”) effluent discharge standards. Effluent from the OWS will be discharged to the stormwater management basin.

2.2.14.2 Sanitary Wastewater

Sanitary wastewater will be treated through an on-site septic system designed to meet the operational needs of the Facilities.

2.2.14.3 Stormwater

The Facilities will collect and discharge stormwater into one or more stormwater management features where it will eventually be released offsite in a controlled manner. While the accumulation of oil in secondary containment structures is not anticipated, any oily water present will be directed to the OWS and separated prior to discharging to the stormwater management basin.

An Erosion Control and Stormwater Management Plan (“ECSWMP”) will be developed and implemented in accordance with federal, state, and local regulations to minimize erosion and sedimentation, as well as the discharge of other potential pollutants, from the site during construction. The Combined Cycle Facility require an operational ECSWMP, as it is an industry type regulated under the Storm Water Discharge Permits rule in Wis. Admin. Code § NR 216, Subchapter II. The operational ECSWMP will be developed and implemented in accordance with federal, state, and local regulations to minimize erosion and sedimentation, as well as discharge of other potential pollutants, from the site during operation.

2.2.15 Fire Protection System

The fire protection system and its constituent features will be designed based on recommendations from the National Fire Protection Association (“NFPA”) 850, “Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations,” NFPA 37, “Installation and Use of Stationary Combustion Engines and Gas

Turbines," NFPA 54, "National Fuel Gas Code," NFPA 70, "National Electrical Code," NFPA 110, "Emergency and Standby Power Systems" and their referenced standards.

To provide dependable fire protection, firewater will be sourced from a large service water storage tank, with the emergency firewater pump connected through an independent suction line designed to ensure sufficient flow and pressure during emergency operation. The main fire header will loop around the power block to supply main branch lines to buildings, auxiliary structures, enclosures, yard fire hydrants, and wet suppression systems. Yard fire hydrants will be located no more than 300 feet from each other, in accordance with NFPA 850. Portable fire extinguishers will be located throughout the Facilities in accordance with NFPA 10.

The principal fire protection panel will be located in the central control room, with alarm annunciation throughout the Facilities. The principal fire protection panel will be connected to all local fire control panels located throughout the Facilities.

2.2.16 Facility Buildings

The Facilities will include buildings essential for the safe and reliable operation and maintenance of equipment. Facility buildings may include:

- Control, administration, and warehouse/maintenance building;
- Mechanical and electrical operations and maintenance building;
- Gas compressors building;
- Water treatment building;
- Combined-cycle system building(s);
- Miscellaneous buildings, including, but not limited to, the emergency firewater pump enclosure, substation control enclosure, CEMS shelter, power distribution centers, and electrical equipment enclosures.

To protect personnel and critical equipment, all buildings will be equipped with appropriate fire protection systems. Appropriate buildings will include heating, ventilation, air conditioning, and security cameras. Building design will comply with all applicable codes and regulations. The Facilities will be designed and constructed to enable safe control, operation, and monitoring from the central control room, with provisions for remote monitoring and dispatch as needed. Sequence and modulating control systems will be fully automated but manual operation will be possible.

2.3 Gen-Tie Lines

Four 345 kV overhead Gen-Tie Line circuits will transmit electricity from the Facilities to the point of interconnection. The conductors will be properly sized to meet thermal stability, vibration resistance, and any other required technical criteria. The span lengths between transmission structures will be approximately 300 to 1,100 feet. The transmission structure heights will be approximately 130 to 190 feet. The Proposed Site Gen-Tie Line Routes will be in a double-circuit configuration for the majority of their length. The Alternative Site Gen-Tie Line Routes may be in a single-circuit or double-circuit configuration. Each Gen-Tie Line route will have a right-of-way width of approximately 50 to 150 feet.

Two Proposed Site Proposed Gen-Tie Line Routes and two Proposed Site Alternative Gen-Tie Line Routes have been identified:

- Proposed Site Proposed Gen-Tie Line Route 1 will be approximately 8750 feet long and consist of approximately 14 steel transmission structures.
- Proposed Site Proposed Gen-Tie Line Route 2 will be approximately 8500 feet long and consist of approximately 14 steel transmission structures.
- Proposed Site Alternative Gen-Tie Line Route 1 will be approximately 8000 feet long and consist of approximately 9 steel transmission structures.
- Proposed Site Alternative Gen-Tie Line Route 2 will be approximately 7000 feet long and consist of approximately 9 steel transmission structures.

The Alternative Site Gen-Tie Line Routes will each be approximately 1500 feet long and consist of approximately 4 steel transmission structures.

2.4 Interconnection Switchyard

The Facilities at the Proposed Site will connect to the transmission system at the Forest Junction 345 kV Substation. ATC will perform modifications to the Forest Junction 345 kV Substation and associated electrical infrastructure to accommodate interconnection of the Facilities. These modifications include a reconfiguration of the existing switchyard from ring bus to a breaker and a half layout, modification of existing transmission line routes to accommodate the switchyard reconfiguration, and associated civil works, including expansion of the graded substation pad.

The Facilities at the Alternative Site will connect to the transmission system at a new interconnection switchyard constructed along the Cypress – Forest Junction 345kV transmission line. Applicants will be responsible for constructing a graded pad and delivering it to ATC, who will be responsible for constructing the new ATC switchyard.

2.5 Natural Gas Infrastructure

Applicants each expect to negotiate a Gas Supply Agreement with WPS to supply natural gas to the Facilities. The location of existing electric transmission and natural gas infrastructure in relation to the Projects is provided in **Exhibit 4.** WPS will be responsible for all activities required for the planning, construction, and operation of the natural gas pipelines and associated metering and interconnection facilities, including studies, evaluations, permits, and regulatory notifications.

3. Construction

The construction process for the Projects will be similar. When practicable, construction of the Projects will occur in parallel to maximize efficiency and minimize impact. The Applicants intend to utilize union labor in the construction of the Projects.

The first step in construction will be to survey, stake, and prepare workspaces for clearing. Appropriate safety measures will be implemented before excavation, including notification through the Wisconsin one-call system to ensure third-party utilities are properly marked.

Erosion control measures will be implemented according to the ECSWMP and applicable permit conditions. Environmentally sensitive areas will be clearly marked to designate them as avoidance areas. Workspaces will then be cleared and graded, as necessary, to provide construction access and facilitate the safe movement of equipment and personnel.

Temporary construction workspaces and laydown areas will be established and include trailers with administrative offices, employee parking, water service, power service, portable latrines, tool sheds, storage containers, and space for delivery and storage of equipment and materials. Construction workspaces will be fenced, as needed, to prevent access by wildlife or unauthorized personnel. A temporary concrete batch plant may be installed to prepare foundations and supply concrete on site.

During construction, measures will be taken to prevent excessive particulate matter emissions from vehicular traffic and construction activities. These measures may include seeding, straw, adding a gravel layer, covering, wetting, or otherwise controlling particulate matter emissions. Materials suitable for backfill will be stored outside of floodplains and other regulated areas. Proper stormwater erosion control, pollution prevention methods, and best management practices ("BMPs") will be implemented as required by WDNR and applicable regulations.

After site clearing and grading, underground installation of the grounding/earthing network will begin and continue progressively as other work areas are completed by the foundation, structural, or mechanical crews. Foundation installation for the main equipment (gas turbines, steam turbines, generators, HRSG, GSU transformers, air cooled condensers ("ACC"), tanks and auxiliaries, etc.) will occur early in the construction process enabling main equipment to be set on their foundations upon delivery to the site. Next, structural steel erection, mechanical erection, piping, and electrical installation will occur. During this time, there will be quality assurance testing of mechanical and electrical systems, alignment checks of the turbines and pumps, and inspection by the original equipment manufacturer ("OEM"). The Combined Cycle Facility will include an ACC, which will be assembled onsite and raised by crane onto a structural steel support system, and a HRSG, which will be installed in stages as the components are delivered.

Testing and pre-commissioning activities will begin after a power train has been fully installed including applicable auxiliary equipment. After all power trains have been tested and pre-commissioned, hot commissioning will occur. After achieving commercial operation, temporary construction workspaces will be restored by decompacting the subsoil, replacing the topsoil, and seeding in accordance with WDNR Technical Standard 1059 "Seeding for Construction Site Erosion Control". Following seed installation, a mulch application will occur following the practices described in the WDNR Technical Standard 1058 "Mulching for Construction Sites".

The construction sequence of an overhead transmission line is generally the following: pre-construction surveying, right-of-way clearing, mat placement and access route grading (if necessary), foundation installation, structure assembly and erection, conductor, optical ground wire (if applicable), shield wire installation, ground rod installation, demobilization, and site restoration.

Transmission structures will either be secured by concrete drilled pier foundations or direct embedment, backfilling with crushed rock, native soils, or concrete slurry. Concrete drilled pier foundation installation typically involves excavating for temporary or permanent casing, rebar, anchor bolt cages, and concrete. The concrete pier typically projects one to two feet above surface grade. Direct embedding typically involves drilling or digging a hole for each structure, partially filling the hole with crushed rock, and then setting the structure on top of the rock base. The area around the structure is then backfilled with crushed rock or soil once the structure is set. Excess soil from the excavation may be spread and leveled near the structure. Transmission structure foundations will have a permanent land cover impact of up to 135 square feet and vary from approximately three to thirteen feet in diameter and 25 to 30 feet or more in depth, each depending on conditions observed during final geotechnical investigation.

After the concrete drilled pier foundation is set and cured, the transmission structures will be assembled, erected, and bolted to the foundation. The bottom section of larger structures is typically bolted to the foundation independently of the upper sections, which in most cases attach top down using a crane. If the structure is directly embedded, it is typically assembled on the ground then installed into the backfilled foundation hole. Conductor and overhead ground wire stringing will be performed with the use of temporary pulling and tensioning sites set up near dead-end structures. After construction, workspaces will be restored by decompacting the subsoil, replacing the topsoil, and seeding in accordance with landowner requests or standards established in the WDNR Technical Standard 1059 "Seeding for Construction Site Erosion Control".

4. Operation and Maintenance

The Facilities will be designed and constructed to enable safe control, operation, and monitoring from the central control room, with provisions for remote monitoring and dispatch as needed. Sequence and modulating control systems will be fully automated but manual operation will be possible. Where practicable, resources may be shared by the Facilities to improve operational efficiency.

The Facilities will be capable of automatic, steady state, and part-load generation control, allowing for continuous load changes that maintain emissions within regulated limits. In the event of unscheduled isolation from the electrical grid, the Facilities will have the necessary emergency systems to ensure safe shutdown and safeguard equipment and systems.

The Facilities will include redundant systems to enhance reliability and minimize downtime, including critical control, safety, and auxiliary systems. The design control system will incorporate robust cybersecurity features to prevent unauthorized access and ensure compliance with regulatory standards. Remote monitoring capabilities will allow operational oversight and diagnostics from off-site locations.

Major maintenance will be completed in general conformance with the baseline inspection, repair, and replacement intervals set forth by the OEM. Assuming a starts-based operating profile for the Simple Cycle Facility, the periodic major maintenance events for each gas turbine are anticipated to be scheduled in general conformance with the following OEM-recommended baseline inspection intervals: (i) 900 factored fired starts between hot gas path inspections (which are inclusive of combustion inspections) and (ii) 2,400 factored fired starts between major inspections. Service intervals may be adjusted based on prior operating experience, engineering judgement, and subsequent revision(s) to the applicable OEM maintenance interval guidance. Assuming an hourly-based operating profile for the Combined Cycle Facility, the periodic major maintenance events for each turbine are anticipated to be scheduled in general conformance with the following OEM-recommended baseline inspection intervals: (i) 32,000 hours between hot gas path inspections (which are inclusive of combustion inspections) and (ii) 64,000 hours between major inspections. Based on the anticipated operating profile for the Facilities, hot gas path inspections will occur approximately every four years and the major inspections will occur approximately every eight years. Turbine major maintenance events are estimated to take 14 to 21 days for a hot gas path inspection and 35 to 49 days for a major inspection (assuming single-shift staffing levels). Duration may vary with planned or emergent work scope.

Turbine maintenance represents the preponderance of potential long-duration outage requirements. Unless arising from unique, Facility-specific work activities, planned maintenance of generators and BOP equipment is expected to either coincide with planned turbine major maintenance events or occur during shorter-duration, routine annual unit outages.

Applicants will require that all on-site contractors follow applicable laws and regulations in addition to best practices for employee safety and public safety. To ensure first responders are prepared for potential on-site incidents, Applicants will regularly coordinate with local first response agencies for training. For any scenarios related to Project construction or operation that may be unfamiliar to local first responders, professional training will be arranged to alleviate any concerns related to preparedness.

The Facilities are expected to operate for approximately 30 years but may operate for a longer period.

5. Environmental Impacts

5.1 Air Quality

The Simple Cycle Facility will include five GE 7F.05 gas turbines and ancillary equipment. The Combined Cycle Facility will include one GE 7HA.03 gas turbine and ancillary equipment. Ancillary equipment that will support both Facilities includes natural gas-fired dew point heaters, natural gas-fired standby backup generators, and natural gas for building heating. Additionally, the Combined Cycle Facility may include a natural gas-fired auxiliary boiler. The Facilities will utilize circuit breakers that will contain sulfur hexafluoride (“SF_6”).

Air emissions from the combustion of natural gas consist mainly of carbon dioxide (“CO_2”), NO_x, CO, VOC, particulate matter (“PM”), PM less than 10 microns (“PM_{10}”), and PM less than 2.5 microns (“$PM_{2.5}$”). The gas turbines, dew point heaters, standby backup generators, potential auxiliary boiler, and building heating will be fueled by natural gas and will not include backup fuel capability.

Nitrogen oxides are primarily formed in the gas turbine combustors because of the high temperatures generated during the combustion process. To limit the formation of NO_x, dry low-NO_x combustors will be utilized to reduce temperatures in the combustion section of both the

7F.05 and 7HA.03 gas turbines. Additionally, an SCR system will be installed upstream of the 7HA.03 gas turbine exhaust stack for control of NO_x emissions. Carbon monoxide and VOC emissions from the 7HA.03 gas turbine will be controlled by an oxidation catalyst. Ammonia ("NH_3") emissions may result from ammonia slip across the SCR system used to control NO_x emissions from the 7HA.03 combustion turbine. Ammonia emissions will be estimated using the vendor-guaranteed ammonia slip concentration and operating assumptions for the Facility. Because ammonia is regulated under Wis. Admin. Code Ch. NR 445, emissions will be included in the air toxics analysis, and modeled ambient concentrations will be compared to the applicable NR 445 ambient air standards/thresholds to demonstrate compliance. Sulfur dioxide emissions are directly related to how much sulfur is in the fuel. The pipeline-quality natural gas that will be used is expected to contain 0.5 grains ("gr") of sulfur per 100 standard cubic feet ("SCF") of gas (gr/100 SCF). This small amount of sulfur is either a remnant of hydrogen sulfide (when the gas is initially processed) or from the sulfur introduced as mercaptan to make the gas odorous for safety purposes. Sulfur dioxide emissions while combusting natural gas will be minimal.

Potential emissions from the Facilities will be reviewed under various state and federal programs including:

- National Ambient Air Quality Standards ("NAAQS");
- New Source Review ("NSR") requirements for major sources and modifications, including:
- Prevention of Significant Deterioration ("PSD") review;
- New Source Performance Standards ("NSPS");
- National Emission Standards for Hazardous Air Pollutants ("NESHAPs");
- Acid Rain Provisions of 40 Code of Federal Regulations ("CFR") Parts 72-75 and Wis. Admin. Code Ch. NR 409; and
- Various other state regulations within NR 400 – 499.

The Proposed and Alternative Sites are located in areas that are classified as "in attainment" for all regulated NSR pollutants with respect to the NAAQS. The Simple Cycle Facility alone will be considered a major source for NSR, as the potential to emit ("PTE") rates for CO and NO_x are above the major source NSR emissions threshold of 250 tons per year ("tpy") individually. Additionally, the PTE rate for CO_2 exceeds the major NSR threshold of 100,000 tpy. As a major NSR source, the Simple Cycle Facility emissions must be evaluated against PSD significant emissions rates ("SER") thresholds. The PTE rates for CO, NO_x, VOC, PM, PM_{10}, $PM_{2.5}$, H_2SO_4, and CO_2e exceed the PSD SER thresholds. The Simple Cycle Facility emissions of any single hazardous air pollutant ("HAP") will not exceed the major source threshold of 10 tpy for a single HAP, nor will total HAP emissions exceed the major source threshold of 25 tpy for all HAPs combined.

The Combined Cycle Facility alone will be considered a major source for NSR, as the PTE rates for CO, NO_x, PM, PM_{10}, and $PM_{2.5}$ are above the major source NSR emissions thresholds of 100 tpy that applies to the steam electric generating unit source category. Additionally, the PTE rate for CO_2e exceeds the major NSR threshold of 100,000 tpy. As a major NSR source, the Combined Cycle Facility emissions must be evaluated against PSD SER thresholds. The PTE rates for CO, NO_x, VOC, PM, PM_{10}, $PM_{2.5}$, H_2SO_4, and CO_2e exceed the PSD SER thresholds. The Combined Cycle Facility emissions of any single HAP will not exceed the major source threshold of 10 tpy for a single HAP, nor will total HAP emissions exceed the major source threshold of 25 tpy for all HAPs combined.

The cumulative air emissions generated by the Facilities will be permitted as a single stationary source of air emissions. The cumulative PTE rates for CO, NO_x, VOC, PM, PM_{10}, $PM_{2.5}$, SO_2, H_2SO_4, and CO_2e exceed the PSD SER thresholds. Cumulatively, it is anticipated that the Facilities will generate more than 10 tpy for a single HAP and 25 tpy for all HAPs combined and will therefore be considered a major source of HAPs.

The Facilities will meet state and federal requirements and emissions limits through the use of air pollution control technology, good operating practice, and reliance on natural gas. Air dispersion modeling, performed as part of the construction permit application, will be used to predict the ambient air quality changes from the Facilities. Predicted ambient air quality will be compared to, and must comply with, NAAQS and the PSD allowable concentration increments under WDNR and federal regulations.

Table 1 compares pollutants and potential emission amounts from the Simple Cycle Facility with NSR major source thresholds. Table 2 compares pollutants and potential emission amounts from the Combined Cycle Facility with NSR major source thresholds.

Table *3* compares pollutants and potential cumulative emission amounts from both the Simple Cycle Facility and Combined Cycle Facility with NSR major source thresholds. The Facilities will require a major PSD permit.

Table 1 Simple Cycle Facility NSR Major Source Thresholds

Pollutant	Maximum Emissions		NSR Major Source Applicability Thresholds/ Major Significant Emissions Rate Thresholds[a] (tpy)
	Expected to Exceed	Not Expected to Exceed	
NO_x	X		250/40
CO	X		250/100
PM	X		250/25
PM_{10}	X		250/15
$PM_{2.5}$	X		250/10
SO_2		X	250/40
VOC	X		250/40
CO_2e	X		100,000/75,000

Pollutant	Maximum Emissions		NSR Major Source Applicability Thresholds/ Major Significant Emissions Rate Thresholds[(a)] (tpy)
	Expected to Exceed	Not Expected to Exceed	
Sulfuric Acid Mist	X		250/7
Lead		X	250/0.6
Fluorides		X	250/3
Total Reduced Sulfur		X	250/10
(a) Major source threshold triggered for at least one pollutant, therefore major significant emissions rate thresholds apply.			

Table 2 Combined Cycle Facility NSR Major Source Thresholds

Pollutant	Maximum Emissions		NSR Major Source Applicability Thresholds/ Major Significant Emissions Rate Thresholds[(a)] (tpy)
	Expected to Exceed	Not Expected to Exceed	
NO_x	X		100/40
CO	X		100/100
PM	X		100/25
PM_{10}	X		100/15
$PM_{2.5}$	X		100/10
SO_2		X	100/40
VOC	X		100/40
CO_2e	X		100,000/75,000
Sulfuric Acid Mist	X		100/7
Lead		X	100/0.6
Fluorides		X	100/3
Total Reduced Sulfur		X	100/10
(a) Major source threshold triggered for at least one pollutant, therefore major significant emissions rate thresholds apply.			

Table 3 Cumulative Simple Cycle Facility and Combined Cycle Facility NSR Major Source Thresholds

Pollutant	Maximum Emissions		NSR Major Source Applicability Thresholds/ Major Significant Emissions Rate Thresholds(a) (tpy)
	Expected to Exceed	Not Expected to Exceed	
NO_x	X		100/250/40
CO	X		100/250/100
PM	X		100/250/25
PM_{10}	X		100/250/15
$PM_{2.5}$	X		100/250/10
SO_2	X		100/250/40
VOC	X		100/250/40
CO_2e	X		100,000/75,000
Sulfuric Acid Mist	X		100/250/7
Lead		X	100/250/0.6
Fluorides		X	100/250/3
Total Reduced Sulfur		X	100/250/10

(a) To remain below the PSD major source threshold for a single stationary source consisting of both combined cycle and simple cycle facilities, the combined cycle facility needs to have the potential to emit less than 100 tpy and the combined potential to emit of the combined cycle facility plus the simple cycle facility needs to be less than 250 tpy. Major source threshold triggered for at least one pollutant, therefore major significant emissions rate thresholds apply.

The Project is subject to the following 40 CFR Part 60 NSPS subparts:

- 40 CFR Part 60, Subpart A – General Provisions
- 40 CFR Part 60, Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units [Auxiliary Boiler (if maximum heat input rating > 100 MMBtu/hr)]
- 40 CFR Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [Dew Point Heater and Auxiliary Boiler (if maximum heat input ratings ≤ 100 MMBtu/hr but ≥ 10 MMBtu/hr)]
- 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Standby Backup Generators)

- 40 CFR Part 60, Subpart KKKKa – Standards of Performance for Stationary Combustion Turbines
- 40 CFR Part 60, Subpart TTTTa – Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units

The combustion turbine NSPS limits under Subpart KKKKa are equally or less stringent than the proposed emission limits. NSPS spark-ignition engine limits under Subpart JJJJ are typically met and certified by equipment manufacturers. Applicants will source compliant engines with manufacturer certifications of compliance that document the applicable limits. Finally, Subpart TTTTa for natural gas-fired combustion turbines will determine the CO_2 emissions limit depending on actual operation capacity factor (determined on a 12-month and 3-year rolling period MW basis).

The NESHAPs that ultimately apply to the Facilities will depend on the final configuration that is approved and constructed. Individually, each Facility will be considered an area source of HAPs, as emissions do not exceed the criteria to be considered a major source. Accordingly, the only NESHAPs that would be applicable are 40 CFR Part 63, Subpart A – General Provisions and 40 CFR 63, Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines. The standby backup generators will meet Subpart ZZZZ requirements by complying with NSPS requirements under 40 CR 60, Subpart JJJJ, as cited above. Collectively, the Facilities will be treated a major source of HAPs and the NESHAP 40 CFR 63, Subpart YYYY – Stationary Combustion Turbines and 40 CFR 63, Subpart DDDDD – Industrial, Commercial, and Institutional Boilers and Process Heaters will also apply in addition to Subpart A and Subpart ZZZZ.

5.2 Land Cover

Table 4 identifies the Wiscland land cover types present within the Proposed and Alternative Study Areas.

Table 4 Proposed and Alternative Study Area Land Cover (WiscLand)

Land Cover Type	Proposed Study Area		Alternative Study Area	
	Acres	Percentage	Acres	Percentage
Agriculture	1,170.58	85.58	1,430.30	89.85
Grasslands	65.22	4.77	110.16	6.92
Forest	52.66	3.85	5.52	0.35
Wetland	52.05	3.81	12.66	0.80
Barren	13.57	0.99	0.00	0.00

Land Cover Type	Proposed Study Area		Alternative Study Area	
	Acres	Percentage	Acres	Percentage
Urban / Developed	10.12	0.74	33.20	2.09
Open Water	3.56	0.26	0.00	0.00
Total	1,367.76	100.00	1591.84	100.00

Approximately 55 to 65 acres of land are expected to be permanently impacted to host the Facilities. Detailed land cover impacts will be provided in the CPCN application.

5.3 Wetlands and Riparian Areas

Westwood Professional Services Inc. ("Westwood") performed a water resource desktop delineation of the Proposed and Alternative Study Areas. In portions of the Proposed and Alternative Study Areas where Applicants have secured access rights, Westwood performed a water resource field delineation. Desktop delineations identified 151 wetlands and 18 waterways in the Proposed Study Area and 121 wetlands and 6 waterways in the Alternative Study Area. Field delineations identified 58 wetlands and 8 waterways in the field delineated portion of the Proposed Study Area and 11 wetlands and no waterways in the field delineated portion of the Alternative Study Area. Full methodology and results of the desktop and field delineations will be provided in the CPCN application. Any additional field delineations that will be completed within the Proposed and Alternative Study Areas will supersede desktop-mapped information in assessment of Project impacts where obtained.

A navigability determination request was submitted to the WDNR Office of Energy on June 23, 2026, for an unnamed waterway (WBIC #5022111) within the Proposed Study Area. The Office of Energy responded on June 25, 2026 and determined that the waterway was non-jurisdictional.

Applicants will avoid and minimize impacts to water resources to the extent practicable. Minor impacts are anticipated and quantification is pending final site control and design. Detailed information regarding wetlands and waterways and any unavoidable impacts will be provided in the CPCN application.

5.4 Floodplains

No Federal Emergency Management Agency ("FEMA") floodplains are mapped in the Proposed Study Area. FEMA floodplains are mapped in the southern portion of the Alternative Study Area. No impacts to FEMA floodplains are expected as a result of construction or operation of the Projects.

5.5 Federal and State Listed Species

The Proposed and Alternative Study Areas were evaluated for the potential occurrence of species and habitats recognized and protected under federal or state law. Federally protected species include those categorized by the United States Fish and Wildlife Service ("USFWS") as threatened, endangered, or as "candidate species" (i.e. proposed for listing) under the authority of the Endangered Species Act of 1973 (16 United States Code [USC] 1531–1544). Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act, enforced by the

USFWS (16 U.S.C. 668-668c). The WDNR also maintains a list of threatened and endangered species for Wisconsin. Laws and regulations pertaining to state-listed endangered or threatened species are contained in Wis. Stat. § 29.604 and Administrative Rule Chapter NR 27.

5.5.1 Federally Protected Species

A USFWS Information for Planning and Consultation ("IPaC") informal list identified the whooping crane (*Grus americana*; non-essential experimental population) and the proposed threatened monarch butterfly (*Danaus plexippus*) as potentially occurring in the Proposed and Alternative Study Areas. There is no estimated decision date for listing the monarch butterfly. Species proposed for listing are not afforded regulatory protections; however, these species may require further review if they are listed. Regulatory restrictions are reduced for non-essential experimental populations. An updated IPaC list will be provided in the CPCN application.

The Proposed and Alternative Study Areas consist mainly of cultivated crops which may provide foraging habitat for the whooping crane. Monarch butterfly breeding and foraging habitat, native and nonnative herbaceous plant communities that support milkweed (*Asclepias* spp.) host plants and nectar resources, may be present in the Proposed and Alternative Study Areas.

There are no designated critical habitats currently identified within the Proposed and Alternative Study Areas for any federally protected species.

5.5.2 State-Protected Species

The Proposed and Alternative Study Areas were included in Endangered Resource Reviews ("ERR"s) (ERR Log #26-471 and 26-470 respectively) conducted by WDNR on June 19, 2026. No required actions were identified for either Study Area. The ERR for the Alternative Study Area included recommended actions for two special concern areas. Avoidance of these areas will be incorporated into the design of the Project to the extent practicable.

5.6 Cultural Resources

Westwood performed a Cultural Resource Literature Review and Assessment for the Proposed and Alternative Study Areas. No archeological sites, cemeteries, or burials were located within the Proposed and Alternative Study Areas. No historic architectural resources were located within the Proposed Study Area or a 0.25-mile buffer. One historic architectural resource was located within the Alternative Study Area and five historic architectural resources, two of which are nonextant, were located within a 0.25-mile buffer. Direct impacts to archaeological sites, cemeteries, or burials are expected to be avoided as no known resources are present within the Proposed and Alternative Study Areas. Historic architectural resources located within the Project Areas and a 0.25-mile buffer will be surveyed, inventoried, evaluated for National Register of Historic Places ("NRHP") eligibility, and/or assessed for potential adverse impacts from the Project, as appropriate. Detailed information regarding cultural resources will be provided in the CPCN application.

5.7 Noise

A detailed Noise Analysis for the Facilities will be provided in the CPCN application. The Noise Analysis will be carried out in accordance with the PSCW's Measurement Protocol for Sound and Vibration Assessment of Proposed and Existing Electric Power Plants.

5.8 Waste Disposal and Chemical Storage

The Facilities are anticipated to generate solid wastes from the wastewater treatment process totaling approximately 6,000 lbs/day. Solid waste may be generated by processes such as lime softening, phosphorus precipitation, soda ash addition, and polymer usage leading to approximately 7 yd^3/day of waste requiring storage and disposal. At this rate, a standard 30-yd^3 roll-off container would be filled approximately every 4 to 5 days. One operating and one standby container are expected to be provisioned to ensure flexibility to adapt to hauling schedules. Solid waste from the wastewater treatment process will be hauled off site by a licensed waste hauler for disposal at a permitted solid waste management facility authorized to accept the material.

Solid waste will be produced from construction debris, construction workers, and employees during operation. These wastes will be collected in trash containers and hauled to a local landfill.

Chemicals will be utilized onsite, primarily in the combined cycle system and water/wastewater treatment processes. All chemicals will be stored in alignment with best practices, local requirements, and the SPCC. 19% aqueous ammonia will be stored on-site for use in the HRSG, and the wastewater treatment system will store and utilize various treatment chemicals to support water quality conditioning, solids removal, membrane treatment, and final effluent stabilization.

Two Spill Prevention, Control, and Countermeasure (“SPCC”) Plans will be developed for the Facilities: one for the construction phase and one for the operation phase. The construction SPCC Plan will be developed by the principal construction contractor 45 days prior to mobilization. The operations SPCC Plan will be developed by a qualified environmental compliance consultant prior to the commercial operations date ("COD") of the Projects. The SPCC Plans will establish training, inspection protocols, and response procedures. A safety data sheet inventory will be available to all site personnel and provided to local first responders. Spill kits will be made available on site. At a minimum, the SPCC Plans will identify the following:

- Typical fuels, lubricants, and other chemicals to be used or stored on-site;
- Methods and location of storage;
- Locations designated for use (i.e., outside of sensitive resource areas);
- Preventive measures to be used to minimize potential impacts;
- Mitigation methods to be implemented in the event of a spill;
- Location of construction spill kits (gloves, booms, sorbents, barrier materials, etc.);
- Emergency notification procedures and forms;
- Contact information for individuals requiring notification if a spill should occur; and
- Procedures for handling contaminated and spill response materials.

A construction superintendent will be responsible for spill containment and cleanup. The construction superintendent will report significant spills (defined as 55 gallons or more) of chemicals and any oil, such as lubricants, fuel, or grease. The construction superintendent will also supervise the cleanup and disposal of contaminated soil and cleanup materials.

Diesel and gasoline fuel may be temporarily stored at the Facilities in aboveground tanks during construction. During re-fueling or transfer of these fuels, preventative measures will be implemented to reduce the risk of spills. Lubricating oils and certain other required industrial chemicals will be stored in specially designed and covered containment areas. Routine inspections and service will keep equipment in good working condition and reduce the risk of leaks of transmission, hydraulic, or brake fluid. Chemical storage areas will be well marked and include eye wash stations, first aid kits, safety showers, hose stations, and spill kits with absorbent pads and/or material.

Larger spills will be removed from the containment area using a vacuum tank truck or be pumped into a suitable container for cleanup. Minor spills will be treated with pad and other absorbent products. The products, along with any contaminated soil, will be immediately removed and disposed of in accordance with state regulations. The pads and absorbent products will be stored on maintenance trucks or in dedicated areas that are readily accessible.

6. Permits and Approvals

Federal- and state-level permits and approvals that may be required for the construction or operation of the Projects are identified in Table 5. Under Wis. Stat. § 196.491(3)(i), local permitting or approvals shall not preclude or inhibit the installation or utilization of the Projects. However, to facilitate cooperation with local governments, Applicants may apply for local permits or approvals.

Table 5 Preliminary List of Federal and State Permits and Approvals

Agency	Permit/Approval	Notes
Federal		
Federal Aviation Administration	Determination of No Hazard to Air Navigation	7460 Notice of Proposed Construction or Alteration required for construction of structures >200 feet tall or possibly for shorter structures within 5 miles of airport runways greater than 3,200 feet in length. See 14 CFR S77.13.
United States Fish and Wildlife Service	Endangered Species Act Review	Consultation is required through the permitting process if the project has a federal nexus and may impact federally listed species or designated critical habitats.
United States Army Corps of Engineers	Section 401 Water Quality Certification	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The Projects will be evaluated to determine the appropriate authorization for unavoidable impacts.
	Section 404 Wetland Permit	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The Projects will be evaluated to determine the appropriate authorization for unavoidable impacts.
State		

Agency	Permit/Approval	Notes
Public Service Commission of Wisconsin	Certificate of Public Convenience and Necessity (Wis. Stat. § 196.491)	Required for construction of a large electric generating facility or high-voltage transmission line.
Wisconsin Department of Natural Resources	Air Pollution Control Construction Permit (Wis. Stat. § 285, NR 405-408)	Required for construction and operation of a new source of air emissions.
	Prevention of Significant Deterioration Permit	Required for construction and operation of a new source of air emissions.
	Title V Air Permit (Wis. Admin. Code Ch. NR 407)	Required for construction and operation of a new source of air emissions.
	Wisconsin Pollutant Discharge Elimination System Construction Stormwater General Permit (Wis. Stat. Ch. 283, Wis. Admin. Code Chs. NR 205, 216 & NR 151)	Required for land disturbance or construction activities that disturb one or more acres with a point source discharge to surface waters of the United States.
	Wisconsin Pollutant Discharge Elimination System Stormwater Industry-Specific General Operating Permit (Wis. Stat. Ch. 283, Wis. Admin. Code Chs. NR 205, 216 & NR 151)	Required under Wis. Admin. Code Ch. NR216.21(2)(b)8 for all steam electric power generating facilities.
	Wisconsin Pollutant Discharge Elimination System Industrial Wastewater Individual Permit (Wis. Stat. Ch. 283)	Required for point-source discharges to surface waters of the United States or seepage systems.
	Water Quality Certification (NR 103 and 299)	For any activities subject to U.S. Army Corps of Engineers Section 404 permitting, WDNR must issue a Water Quality Certification.
	Wetland Fill Permit (Wis. Stat. Ch. 281)	Impacts to jurisdictional wetland resources will be avoided and minimized to the extent practicable. The Projects will be evaluated to determine the appropriate authorization for unavoidable impacts.
	Construction Affecting Navigable Waterways (Wis. Stat. Ch. 30)	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The Projects will be evaluated

Agency	Permit/Approval	Notes
		to determine the appropriate authorization for unavoidable impacts.
	Waterway Crossing General/Individual Permit (Wis. Stat. Ch. 30)	Impacts to jurisdictional water resources will be avoided and minimized to the extent practicable. The Projects will be evaluated to determine the appropriate authorization for unavoidable impacts.
	Incidental Take of Threatened or Endangered Resource (Wis. Stat. Ch. 29)	Consultation and the potential for an Incidental Take Permit is required if state listed species are impacted.
	Water Use Approval (Wis. Stat. § 281.35, Wis. Admin. Code Ch. 142)	Required for construction of a private well.
	Private Well Notification Number	Required for construction of a private well.
	Well Permit (Wis. Stat. Ch. 280, Wis. Admin. Code Ch. NR 812)	Required for construction of a new well.
	High Capacity Well Permit (Wis. Stat. § 281.34; Wis. Admin. Code § NR 812.09)	Required for construction of a well, or well system on the same property, that has a capacity of more than 100,000 gpd.
	Water Treatment and Conditioning Permit (WI-0046450-6)	Required for water treatment and conditioning facilities that result in discharges of backwash water, regeneration water, concentrate or reject water, unit wash water or drainage water, or other similar wastewaters associated with water treatment processing that are discharged to surface waters or indirectly to groundwaters via seepage.
	Concrete Products Operations Permit (WI-0046507-6)	Required for activities that generate concrete wash water regulated by the WDNR as concrete product operations. Potentially required for concrete batch plant.
Wisconsin Historical Society	Archaeological Survey Approval	Approval of archaeological surveys (Wis. Stat. § 44.40) and Section 106 of National Historic Preservation Act.
United States Environmental Protection Agency, Wisconsin	Title IV Acid Rain Permit	Required for construction and operation of a new source of air emissions.

Agency	Permit/Approval	Notes
Department of Natural Resources		
Wisconsin Department of Transportation	Oversize-Overweight Vehicle Permit	Required for any vehicles exceeding posted limits on state roads.
	Right-of-Way Permit	Required for any construction in state highway right-of-way.
	Utility Permit	Required for construction or maintenance of a utility facility in state highway right-of-way.
Wisconsin Department of Safety and Professional Services	Construction of all Buildings and Structures	Required approval of plans and specifications under Wis. Stat. §101.02.
	Installation of Dust Filtering and HVAC Equipment	Required approval of plans and specifications under Wis. Stat. §101.12.
	Installation and Registration of Boilers, Pressure Vessels, and Power Piping	Requires an initial inspection after construction, annual thereafter. (Wis. Stat. § 101.17.)
	Sanitary Permit	Required under Wisconsin Privacy Law, Wis. Stat. § 15.04(1)(m).
Wisconsin Department of Agriculture, Trade, and Consumer Protection	Installation of Fuel of Lubricating Oil Storage Tanks	Required for approval of plans and specifications under Wis. Stat. §101.09.

7. Schedule

Applicants plan to submit a CPCN application to the PSCW in October 2026. Construction of the Projects is expected to begin in Q4 2027 and be completed in Q4 2031, contingent on successful permitting, agency approvals, and other development and pre-construction activities.