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COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

CASE NO. PUR-2024-00184

IN RE: PETITION OF VIRGINIA ELECTRIC AND POWER COMPANY

Integrated Resource Plan filing pursuant to Virginia Code Section 56-597 et seq.

TRANSCRIPT OF PROCEEDINGS BEFORE

THE HONORABLE SAMUEL T. TOWELL

THE HONORABLE JEHMAL T. HUDSON

THE HONORABLE KELSEY A. JEHMAL

DAY 5

Friday, April 18, 2025

9:00 a.m. to 5:34 p.m.

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Pages: 1101 - 1465

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P R O C E E D I N G S

COMMISSIONER HUDSON: Dominion, are you ready to continue with rebuttal?

MS. ALLABAND: Yes, Your Honor.

The Company calls Joseph Bocanegra.

JOSEPH L. BOCANEGRA, called as a rebuttal witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MS. ALLABAND:

Q Good morning.

A Good morning.

Q Will you please state your name, position of employment, and business address?

A Yes. My name is Joseph Bocanegra. I am the manager of sales and revenue for Dominion Energy Services, Inc., testifying on behalf of Virginia Electric and Power Company. My business address is 120 Tredegar Street, Richmond, Virginia 23219.

Q And do you have with you a document entitled Rebuttal Testimony of Joseph L. Bocanegra, consisting of a one-page summary, eight typed pages of questions and answers, and Appendix A and one rebuttal schedule

that was filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q Was that document prepared by you or under your supervision?

A Yes, it was.

Q And do you have any corrections or additions to that document?

A No.

Q If you were asked the questions appearing there, would you provide the same or substantially similar answers?

A Yes.

Q And do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes.

MS. ALLABAND: Your Honor, I'd ask that the Rebuttal Testimony of Joseph L. Bocanegra in public version only be marked for identification and admitted into the record.

THE BAILIFF: The Rebuttal Testimony of Joseph L. Bocanegra will be marked as Exhibit 67.

(Exhibit No. 67 was marked for identification.)

COMMISSIONER HUDSON: The rebuttal

testimony marked and described as Exhibit No. 67 is entered into the record.

(Exhibit No. 67 was admitted into evidence.)

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q Mr. Bocanegra, were you listening to counsel from Walmart's cross-examination of Company Witness Hubbard earlier in this proceeding?

A Yes, I was.

Q And do you recall counsel from Walmart asking about whether the Company's load forecast included projected DSM savings from projects that are not currently existing or proposed?

A Yes.

Q And for simplicity purposes, can we refer to those as generic savings?

A Yes.

Q I'd like to hand out an exhibit.

MS. LINK: Your Honor, may I just get the iPad from the --

COMMISSIONER HUDSON: Sure.

MS. LINK: -- from the court reporter?

BY MS. ALLABAND:

Q Mr. Bocanegra, while those copies are being passed out, do you have anything that you wish to clarify from that cross-examination you heard earlier with Mr. Hubbard?

A Yes. Really kind of want to walk through a little bit of the process of how the kind of DSM savings are calculated.

And --

Q Oh, one moment, Mr. Bocanegra.

So did you or your team -- did the Company prepare an exhibit that would help explain this process?

A Yes.

Q And I'll put that on the screen.

Is this that exhibit that you prepared?

A Yes, it is.

MS. ALLABAND: Your Honor, I'd ask to have this exhibit marked. It is the DSM modeling process.

THE BAILIFF: The DSM modeling process document will be marked as Exhibit 68.

(Exhibit No. 68 was marked for identification.)

BY MS. ALLABAND:

Q And, Mr. Bocanegra, will you please

explain the modeling process using this exhibit?

A Yes. So you can kind of see here, works in kind of a linear fashion, at least for the purposes of the IRP. Kind of we start here with the energy conservation group, which is represented by Mr. Hubbard in this particular case.

Kind of as Mr. Hubbard described, the energy conservation group is the first group who has inputs into the DSM projections. This group kind of coordinates with different stakeholders, third-party vendors to develop and kind of package programs and then also present those programs to the Commission for approval in DSM proceedings.

So, ultimately, the energy conservation group is responsible for exploring and understanding the market conditions for EE and DSM technologies.

The next step in the kind of ride that these programs go through is the demand-side planning. So the demand-side planning team takes those proposed DSM programs from the energy conservation team and performs EM&V, which is evaluation, measurement, and verification, on existing programs and then, also,

cost-effectiveness testing on existing programs and proposed programs.

This helps inform the development of 8760 savings profiles for each measure in the portfolio. These savings are then used to develop the annual DSM energy in peak savings for the existing programs. So this team develops the saving profiles for what -- the team then also develops the saving profiles for what we kind of termed the generic DSM. The generic DSM is a -- are -- the "generic DSM savings" is a term that we use for program savings that have not yet been developed. So I believe I heard somebody call them, like, aspirational DSM savings earlier in the proceeding.

And so this generic portion is basically used to fill the gap between the savings of the existing and planned programs and then the proposed DSM savings targets.

After the demand-side planning team kind of does their work and provides the kind of the load profiles, then it comes over to the sales and revenue forecasting team.

So these savings are split by the demand-side planning team into two portions.

There's the fixed DSM and then there's the incremental DSM. So if -- to kind of explain these and define these things a little bit better, the fixed DSM is the DSM that would be embedded in the historical data. So if you kind of think about it, in this particular case, you can kind of think about it as if an individual were to change all of the lights in their house to high-efficiency LEDs and they did that last year, then you would have a full year of that savings built into your historical load that you use to build your models for residential customer usage.

So, therefore, it's kind of embedded in that.

And if you were to include all of the DSM savings, you would inherently double count savings.

So in order to avoid that kind of double counting of savings that's already embedded into the historical models, we remove the fixed piece from the DSM savings estimates and then when we adjust the forecast, we only remove the incremental piece from the forecasted energy for the IRP.

Q Thank you, Mr. Bocanegra.

And when you say "remove," you're saying we reduce the forecast by those incremental savings; is that right?

A Yes, yes.

Q And then once you have that forecast, that is what is passed to Mr. Compton's team for the modeling?

A Yes, it is.

Q Thank you. And Mr. Freed, on cross-examination from the City, explained some benefits he believes happen if DSM is included as a selectable resource rather than as a load reducer.

Do you have a response to his testimony?

A Yes, I do. So functionally, modeling DSM as a selectable resource or as a load reduction is similar. The reason for the similarity lies in the cost-effective analysis that's performed by the demand-side planning team.

So the demand-side planning team, in their cost-effectiveness analysis, kind of start by modeling annual expected energy and capacity savings. This includes production cost savings, kind of like variable O&M, LMP, emission reductions, things of that nature. And to

calculate these production cost savings, they are calculated by taking the difference in those individual pieces and -- that you get when you run the DSM savings through the PLEXOS model in the forecast with and without the DSM present. So this gives you a bit of a dynamic estimation of the production cost.

They also include, in the cost-effectiveness testing, deferred T&D capacity avoidance costs and deferred generation and -- or deferred generation capacity. They use the PJM BRA results and the IFC forecast for the deferred generation capacity.

These costs and the program benefits are then run through the Company's four different cost-benefit tests. They include the rate impact test, the Utility Cost test, the participant cost test, and the total resource cost test.

In order to be included in the Company's DSM portfolio, the programs must pass the cost-effectiveness test of -- must past three of these four cost-effectiveness tests.

The cost-effectiveness tests account for the economic considerations that come into play for the -- that come into play for the components

of the DSM portfolio, kind of as if they were modeled on the supply side. So that's how it's kind of functionally similar.

Additionally, putting the DSM programs on the supply side can run the risk that PLEXOS will select less DSM than has been mandated. These models also expose programs that struggle with cost-effectiveness -- a lot of times certain residential programs, low-income programs -- to being excluded from the preferred portfolio.

Generally speaking, the merits of the inclusion of these programs are best left to proceedings that specialize in analyzing the merits of those programs.

So having the DSM savings as a load reducer ensures that the savings that are included are at a specific amount and at the specific target that the Company has proposed or been required to meet.

Q Thank you, Mr. Bocanegra. And were you listening when Mr. Wilson testified earlier in this proceeding, he discussed two types of double counting and asserted that PJM does not address them. And this relates to the data center forecast.

I'm sorry, we're changing topics a little bit.

Do you have a response to his testimony?

A Yes, I do.

So, first, I kind of want to define the two types of double counting. I know Mr. Wilson did, but just as a refresher, it's been a few days.

So the first type of double counting he kind of mentioned was the counting of exogenous load that has already been captured in documents by the forecasting model. So this would be similar to the DSM that I was mentioning earlier, that kind of double counting, where the load that you're thinking is already built into your historical load, and then you count it again.

So -- and then the second type is one that's been mentioned a few times also in this proceeding, which would be that data center customers who express interest in multiple territories but only plan to move to one. So you have those two types of double counting.

And while I believe that PJM was initially concerned mostly in -- with that first type of double counting, that I do know that PJM has

become aware, is concerned about, and is actively taking measures to attempt to control the second type of double counting.

Moreover, when Mr. Wilson spoke of the PJM forecast, he spoke of it as a whole, kind of expressing concern about double counting and from the PJM RTO altogether, even citing AEP Ohio as an example.

The Company, though, in using the PJM-derived forecast, only uses PJM's DOM Zone forecast. And moreover, the Company only uses the DOM LSE data center forecast.

Excuse me.

So the DOM LSE data center forecast has kind of multiple levels of validation contained within it.

First off, the Company provides PJM its data center forecast, which goes through its own thorough process to avoid double counting, which Company Witness Blackwell will go into in more detail.

Then PJM is allowed to use its own separate, independent judgment and expertise to avoid any such double counting as well.

Q Thank you, Mr. Bocanegra.

Turning to another topic, Dr. Laws and Dr. Stover have agreed with Staff Witness Smith's recommendation that the Company model at least four nodes in PLEXOS going forward. Dr. Stover even said that breaking the Dominion zone into subzones can be easily accomplished within a tool like PLEXOS using a hub and wheel-type model.

Do you agree that it can be easily accomplished?

A So from the zonal modeling, I can really only speak from the forecasting perspective. But from that perspective, breaking the IRP modeling into four or more zones could create several logistical forecasting issues.

First, the Company is required to use the PJM DOM Zone forecast as the basis of its forecast in the IRP proceeding. PJM does not forecast at the subzonal level. And so basically, in order to do that, the Company would have to basically exercise a fair amount of forecasting judgment to reduce the DOM Zone even further to smaller subLSE levels.

This judgment would require significant assumptions to be made about the allocation of load. And while it would appear to provide more

precision in your forecast, that -- this precision would be mostly an illusion. A lot of these individual assumptions would be subject to their own amount of error.

The other would be that -- from the Company's forecast would kind of suffer from the same allocation problem. We do -- to overcome this, you would have to wait until a sufficient amount of history of AMI data was available to create a viable forecasting model at the granular level that is being suggested.

Another concern that I have, and it kind of coincides with other recommendations that were mentioned during this proceeding, which is the expansion of scenario planning. Each zone would need its own scenarios. Each zone would need its own data center forecast, DSM forecast, and so on.

And so you run into this ever-expanding dimensionality where you would need to combine these things. And eventually, the possible combinations could get a little out of hand.

Q Thank you, Mr. Bocanegra. One last topic.

Mr. Curtis responded to your rebuttal testimony regarding the ANN model that Enverus uses, and he said it was a reliable tool that

Enverus has used for years.

Do you have anything that you wish to point out or clarify?

A Yes, I do.

Q Do you want me to put the example on the --

A Yeah.

Q Okay. And so this is the Enverus report I'm going to show.

This is page 22. So this is page 22, which shows the chart The LSE Average Annual Data Center Load Forecast. And page 17 shows at the top the DEV-LSE peak load forecast. And I'm going to fold the paper so that we can try to look at those two charts together.

Okay. Please continue, Mr. Bocanegra.

A Yes. So you can kind of see here one -- an example of some of the issues that we were kind of talking about with the Enverus load forecast.

As you can see in the charts for the DEV-LSE peak load forecast, Enverus's forecast is actually higher than the Company's 2024 IRP forecast. However, at the same time, Enverus's forecast for data center load is lower than the

Company's DEV forecast.

This kind of inconsistency of the peaks being actually higher when one of the drivers of these peaks is actually lower in the Enverus forecast is kind of the inconsistencies that we were talking about in our rebuttal.

Also the, kind of, inability to explain these and isolate the drivers is kind of inherently built into the artificial neural network model. It makes it difficult to understand the underlying reason for the differences that we're seeing here.

And any forecast used in an IRP proceeding should be reviewable, should be reliable because it's the foundation for the IRP and the capacity expansion model.

And so this type of thing, this example, kind of, this leads me to question the use and reliability of artificial neural networks and their role in long-term planning.

Q Thank you, Mr. Bocanegra.

MS. ALLABAND: Your Honor, the witness is available for cross.

COMMISSIONER HUDSON: Counsel, would you like Exhibit No. 68 to go into the record?

MS. ALLABAND: Yes, Your Honor. Thank you.

COMMISSIONER HUDSON: The document marked and described as Exhibit No. 68 is admitted into the record.

(Exhibit No. 68 was admitted into evidence.)

COMMISSIONER HUDSON: Appalachian Voices?

MS. KING: Just briefly, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MS. KING:

Q Good morning, Mr. Bocanegra.

A Good morning.

Q My name is Kat King, and I represent Appalachian Voices.

A Yes.

Q I just have one quick clarifying question. And I didn't quite catch how your counsel phrased, but I'd just like to clarify for the record.

It is your understanding that, when Mr. Wilson was talking about the two types of double counting, it was his testimony that the exogenous double counting, that first type you described, is accounted for by PJM; is that correct?

A That's correct.

MS. KING: No further questions. Thank you.

COMMISSIONER HUDSON: Thank you.

NRDC?

MR. JOHNS: Just briefly, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. JOHNS:

Q Hi, Mr. Bocanegra.

A Hello.

Q Evan Johns, on behalf of Sierra Club and NRDC. I really just want to ask you about a few -- I guess you can call them negative externalities that your colleagues have pushed on to you in prior testimony.

The first has to do with the load forecast. Were you in the courtroom yesterday when I was discussing the JLARC report's recommendation that utilities be permitted to delay the addition of demand?

A Yes. Yes, I was.

Q Okay. And I believe I asked Mr. Compton whether or not the modeling in support of the IRP assumed that the Company would be able to delay the addition of demand if it was in the best

interests of the system reliability or the cost to consumers as a whole.

A So as the forecast was developed, that was not included. However, the forecasting model is capable of including that.

Q Okay. That's actually very helpful.

And so as it stands currently, there's never a situation in which Mr. Compton's group, in kind of building the portfolio of resources, comes back to you and says, well, actually, if we could delay the addition of some of this load, you know, and allow it to come in as a block, that that would save consumers some money or otherwise support reliability concerns.

Does that ever happen? Or once you lock in the forecast, is it just passed on to Mr. Compton's team?

A There is back-and-forth between the strategic planning team and the forecasting team throughout the IRP process to make sure that the forecast is kind of making sense, that it works with the PLEXOS model, that nothing is creating any issues.

But in this particular IRP proceeding, the interaction that you're talking about, nothing

like that occurred.

MR. JOHNS: Okay. Thank you, Mr. Bocanegra. That's all the questions I have.

COMMISSIONER HUDSON: Thank you.

United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: No questions.

COMMISSIONER HUDSON: DCC?

MR. MURPHEY: No questions, Your Honor.

COMMISSIONER HUDSON: Walmart?

MS. GRUNDMANN: Yes, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MS. GRUNDMANN:

Q Good morning, Mr. Bocanegra.

A Good morning.

Q Carrie Grundmann, here on behalf of Walmart.

I apologize. I'm going to jump around a little bit, so bear with me.

A Yeah.

Q So let's start with Exhibit 68.

A Yes.

Q So specifically focusing on this second line here on the demand-side planning, when it

says "no IRP witness," does that mean the Company didn't sponsor a witness to address this demand-side planning portion of this four-step process?

A That is correct.

Q Okay. Can you answer any questions about this?

A Yes. I think that both myself and Mr. Hubbard have enough overlap with the group to be able to speak to a number of their processes.

Q Do you know why no IRP witness was presented for this aspect of the demand-side planning?

A I believe, again, it falls into the fact that both me and Mr. Hubbard can have enough overlap with the group to be able to speak to it.

Q So you see I've underlined some language here, which is -- the demand-side planning team, it sounds like they develop assumptions for generic DSM to fill the gap between savings from identified programs and VCEA targets; is that correct?

A That is correct.

Q And before, I heard you discuss generic savings. So the phrase here is "generic DSM," but

in this context are generic savings and generic DSM sort of similar in topic?

A Yes.

Q Okay. And so it sounds like, as I read that, the -- and you may recall I had a discussion with Mr. Hubbard about the concept of approved programs, which are currently existing DSM, and proposed programs, which are the ones that are currently before the Commission.

Do you recall that discussion?

A I do.

Q So that category are the sort of existing, and then we have the second category of generic DSM. And the existing programs, according to this language here, aren't sufficient to meet the VCEA targets; is that correct?

A Not in the out-years of the forecast.

Q Okay. And so then you-all are modeling additional sort of DSM in order -- is it fair to say that you're only modeling to get to what you project the targets to be in the out-years of the program?

A That is -- the purpose of the -- that is to fill the gap for the targeted DSM.

Q So you don't do anything to assume whether

you could exceed what you-all have projected to be the future VCEA DSM targets?

A I believe when setting those targets that the Company, kind of working with the demand-side planning team and also the energy conservation team, work with the potential study and kind of our vendors to understand the market for DSM and are trying to develop targets that they feel are realistic but also satisfy the cost-benefit constraints of needing to -- so everything has to be cost-effective. And so they are trying to balance the cost-effectiveness of it with achievableness, with kind of the ambition of doing as much DSM as they possibly can.

Q But it sounds like the ambition of the Company only goes as high as what you expect to be the targets of the law, not anything beyond that?

A I don't know if that's a fair characterization of that. Just because the target and the law coincide doesn't mean that that's the limit of our ambition.

Q Well, did you-all conduct anything in the demand-side planning process to assess the potential to exceed potential VCEA targets?

A For the IRP?

Q Sure.

A Yes. In our low-load scenario, I modeled -- basically DSM at 50 percent adder, so I increased DSM by 50 percent in the low-load scenario.

Q But that particular scenario has -- do you remember the discussion that I had yesterday, I believe it might have been with Staff Witness Smith, about the concept of when you toggle more than one thing off in the modeling, how it doesn't allow you to determine the impact of -- the precise impact of one among many toggle variables?

A Yes.

Q So in this case, the Company did not conduct any modeling that focused on the impact the increased or decreased DSM would have on the base plan, the VCEA with EPA?

A So, no, the Company did not create a model that isolated the impact of DSM due to the various time constraints of conducting the IRP.

Q And then -- so let me make sure I understand.

Confirm for me what you modeled on the low-load scenario.

A The low-load scenario was a low data

center growth combined with a high DSM savings.

Q Help me understand the logic of that.

Because if there's low data center growth, there may be less need to build expensive generation resources; isn't that correct?

A I can't really speak to that. I don't do the capacity expansion modeling.

Q Remind me of your title, please, Mr. Bocanegra.

A The manager of sales and revenue forecasting.

Q How long have you been in that position?

A Six months.

Q How long have you been with the Company?

A A year and a half.

Q And what did you do prior to being with the Company?

A Forecasting.

Q Okay. So -- and how many years have you been forecasting?

A Six years or so.

Q Okay. So that's six years plus the year, year and a half that you've been with the Company; is that right?

A Yes. I have been doing utility work for

11-plus years.

Q Okay. And so you understand that -- as you've already said, that in order for DSM programs to be approved by this Commission, they must meet a cost-effective test; is that correct?

A That is correct.

Q And so logically, doesn't it stand to reason if the Company is proposing to spend -- let me back up.

Are you aware that the Company has put forward some numbers based upon the supplement -- the directed supplement in this case as to the differing costs of compliance with the VCEA with and without data center load?

And I'm going to put --

A Only -- only generally familiar with. I was not responsible for this section.

Q I understand. I'm just going to put up, for purposes of the record, from the SCC-directed 2024 IRP supplement, Figure 3.1.

And I just want to make sure you and I are on the same page, that this number is the VCEA with EPA no data center load growth, and that's a net present value number of approximately 80 billion.

Do you see that?

A Yes.

Q And then if you do the VCEA with EPA including the data center load growth, it's 102.9 billion.

Do you see that?

A I do.

Q Okay. So I'm trying to understand why it would be logical to assume that there would be a 50 percent increase in less energy usage when the load growth is projected to be less under the alternative modeling that you performed, as compared to why customers wouldn't be -- wouldn't have a greater incentive to preserve more energy if they were going to pay $20 billion more in a high-load scenario.

A So just a point of correction.

Q Sure.

A The no data center load growth is not the low scenario that I am speaking of. It was a different scenario.

Q I understand. It's still -- it's the broader concept that I'm trying to understand why, from a modeling perspective, you wouldn't have assumed that customers were more incentivized to

save energy if there was a high-load versus low-load scenario?

A I don't know if I can answer your question.

Q Who made the decision that you would only model increased DSM in a low-load scenario?

A I believe this was a group decision.

Q What group was that?

A Between the load forecasting group, the strategic planning group, and the demand-side planning group.

Q You heard the discussion from Mr. Compton yesterday. I think it was the concept of, sort of, energy independence and how Dominion is one of the largest importers of energy in PJM.

Did you hear that?

A I did.

Q That position likely becomes worse the higher the load forecast.

Would you agree with that? Absent building more generation resources to serve that load, correct?

A I was going to say that makes a pretty large assumption, yes.

Q So let's go back.

Absent building more generation in a high-load scenario, the Company has to technically -- it technically loses more energy independence than under a low-load scenario; isn't that correct?

MS. ALLABAND: Your Honor, I would object. This is a hypothetical with many assumptions.

MS. GRUNDMANN: Your Honor, at the end of the day, the issue is is that many issues with respect to DSM were pushed from Mr. Compton to this witness. He has conducted modeling.

I'm attempting to really explore decisions the Company made to fully vet DSM and its value in an IRP. And I'm -- you know, he has indicated to me that he can't explain to me why he did what he did in his particular portfolio, which has left me only in a position to sort of back up with a hypothetical.

So that -- some of my question is to just explore whether or not the Commission has before it sufficiently relevant evidence as to the value or consideration that the Company gave to DSM resources, which is incredibly relevant to the future requests that will come before this Commission and, quite frankly, whether this IRP is

reasonable and in the public interest.

MR. WINSTON: The City would join in Walmart's position, in counsel for Walmart's position.

I think, essentially, the nature of the IRP is somewhat hypothetical, especially when it goes to assumptions being placed into a model. So the City is with Walmart on this one.

COMMISSIONER HUDSON: I'll instruct the witness, if you're able to answer the question, you can do so. If you're unable to --

THE WITNESS: Thank you.

BY MS. GRUNDMANN:

Q Would you like for me to try to repeat it again?

A Yes, please.

Q I will do my very best.

So the context for the discussion was the conversation that Mr. Compton had yesterday about energy independence. Okay?

A Yes.

Q And I'm trying to, for purposes of my hypothetical, hold constant the Company's current generation resources. Okay? So right now we're not projecting that you build anything else.

What I'm trying to say is, if you have a high-load scenario, you are likely to need more resources than you would need in a low-load scenario.

Do you agree with that?

A Again, making a considerable amount of assumptions -- can you repeat that?

Q Well, does the Company presently have enough generation to serve all of the load in its service territory?

A I think it depends on the day and the situation.

Q As a general premise, 8760, 24/7/365, does the Company have enough generation to meet the needs of its customers on a day-in-and-day-out basis with the generation currently within its service territory?

A I believe, subject to check, that the Company is a net importer of energy.

Q And so that position becomes worse in a high-load versus low-load scenario?

A Assuming no additional generation is built.

Q Exactly. Okay.

Now, I wrote down a note here, and it had

to do with the concept of modeling DSM as a selectable resource in PLEXOS.

A Yes.

Q And my note here indicates that you cautioned against that because you think that PLEXOS will select less DSM and mandate it.

Do you recall that?

A Not so much, I think, but acknowledge the possibility.

Q Okay. So the reason for my question is is I was going to ask how do you know that. And, essentially, did the Company perform modeling that assessed DSM as a supply-side resource that was then not produced in the course of this proceeding?

A No, we did not.

Q Okay. And I'm going to ask you a question, and I'm happy for you -- you know, your job is the manager of sales and revenue, and so part of your job is to project future sales and revenue; is that correct?

A That's correct.

Q And you have some role in -- as a result of this forecasting, is -- it is specifically your job to determine what energy and demand reductions

would be attributable to DSM in the future; is that right?

A Yes.

Q Okay. So I'm going to put up here -- I know it hasn't been admitted yet, but I'd like to put up a section from Mr. Hubbard's rebuttal testimony.

It's in response to some testimony from Mr. Key and -- I'm going to start from just the bottom of the page so you can see. I'm on the bottom of page 2, line 16, and the question is just about the additional potential reductions that could occur and whether or not they are sufficient to offset the need for 773 summer megawatts of gas-fired generation.

And in response to that, Mr. Hubbard goes through a couple of items, and I want to focus with you on item No. 3, which is the concept of customer fatigue and attrition.

You're aware that there's this concept in DSM that if you ask customers to reduce their load or turn off power too often, that they may disregard the call even if, you know, they understand they may be giving up some sort of an incentive to do so, correct?

A I am.

Q Did the Company undertake any analysis as to whether the past history of customer fatigue is relevant to future history of customer fatigue in light of the increased bills that customers are projected to see over the planning period?

A So I know the Company performs extensive EM&V studies for its energy efficiency offerings, including its DR programs.

Q But that EM&V is for these existing programs, right, because you have to have had actual real-world data to conduct EM&V; is that correct?

A That is correct.

Q So EM&V is not presently relevant to what might happen over the planning horizon through 2039, correct?

A I do not think that is correct.

Q Well, you can't conduct EM&V on a program that hasn't yet been proposed and has not yet put in place.

You can only make assumptions about that EM&V, correct?

A I think the history of these programs is deeply informative into what they might look like

in the future.

Q And that's why my question asked whether the Company undertook any analysis as whether to -- the history of adoption will be relevant in the future to the likelihood of adoption, particularly in light of the somewhere between 80- to a $100 billion that the Company expects to spend under this planning document.

MS. ALLABAND: Your Honor, I would object and say this has been asked and answered.

MS. GRUNDMANN: Your Honor, to be very clear, it does not appear that my question was answered at all. And so, again, we've been -- he and I have been very clear that EM&V is preexisting.

My question is very narrow, and it is specifically related to what analysis was done to determine whether levels of attrition for prior and preexisting programs has any relevance in whether the Company assessed that looking forward to 2039.

I think I've asked it twice, and the reason for that is because I've yet to receive an answer.

MS. ALLABAND: Your Honor, I would say

he's made it clear that the EM&V studies have been done and are directly relevant and historical to the future.

MS. GRUNDMANN: Your Honor, I do think I'm entitled to an answer to my question as to whether or not the Company did anything to say, you know what, we agree that attrition has been at X percent up to 2025, but since we're going to spend a hundred billion dollars, which is infinitely more than we've ever spent to develop our system, it behooves us to study whether or not customers will have a greater incentive to use less energy through 2039.

And if the Company didn't do that, that is also relevant to the assumptions underpinning this plan.

So if he doesn't know the answer to that, I'm happy for him to say, I do not know whether we undertook that analysis. But telling me -- answering a different question than I asked doesn't mean it's been asked and answered.

COMMISSIONER HUDSON: So, again, I'll instruct the witness, please answer to the best of your ability. And if you're unable to answer, just say you're unable to answer.

THE WITNESS: Okay.

BY MS. GRUNDMANN:

Q Did the Company undertake any analysis to determine whether historical attrition and adoption was reasonably likely to continue throughout the planning period?

A Beyond the way I've already answered?

Q And by --

A EM&V informing the program design?

Q So does that mean that the Company adopted attrition rates -- adopted the attrition rates for its EM&V conducted to date as if those attrition rates would hold firm moving forward throughout the planning period?

A That, I do not know.

Q Who is the witness that can answer that question?

A Mr. Hubbard may be able to speak to the design of the demand response programs.

Q My understanding, Mr. Bocanegra, is that it was your job to forecast the energy and demand reductions attributable.

Would it be fair to say that the best group to have answered that is the ones that aren't present here, which is the demand-side

planning team who would have conducted to fill the gap between existing DSM and the VCEA targets?

A I do not know.

MS. GRUNDMANN: Thank you, Mr. Bocanegra. Those are all my questions.

COMMISSIONER HUDSON: Microsoft?

MS. ROBB: Thank you, Your Honor.

Just a few, Mr. Bocanegra.

CROSS-EXAMINATION (Reb.)

BY MS. ROBB:

Q Cliona Robb on behalf of Microsoft. Good morning.

A Good morning.

Q I'm going to ask you a couple of questions about surrebuttal, and part of them are -- I just had with your counsel this morning and part of them are going to be related to Mr. Compton's testimony yesterday.

Were you in the courtroom for that testimony?

A I was.

Q And you recall he said, regarding locational modeling, that Dominion was not familiar with that being done within the context of an IRP. They go to conferences for IRP and

they haven't run into folks that do that.

Do you recall that testimony?

A Yes, I do.

Q Okay. So I assume, then, that you do not have experience with locational modeling?

A No, I do not.

Q All right. And would you object to the proposal that Mr. Compton and I discussed yesterday about Staff, the Company, and perhaps some experts in locational modeling, like Dr. Stover, getting together and discussing whether locational modeling was feasible and then having a report on that discussion in the Company's 2025 IRP update?

A Again, as with Mr. Compton, assuming the Staff and the Commission have no objections or qualms about that, the Company would not.

MS. ROBB: Thank you. No further questions.

COMMISSIONER HUDSON: City of Alexandria?

MR. WINSTON: Thank you, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. WINSTON:

Q Good morning, Mr. Bocanegra.

A Good morning.

Q I'm going to put up on the projector the matrix from the Company's IRP filing, which is almost unreadable in person but we're going to try.

And this first question I'm directing to you partially in response to something that you said in your surrebuttal and partially because Mr. Compton directed me to ask you about this.

Do you see the highlighted Code section on the screen --

A Yes, I do.

Q -- Virginia Code Section 56-599B?

And this is -- would you agree, or subject to check, that that statute governs IRPs?

A That -- subject to check.

Q And it says in the text portion of the table:

In preparing an Integrated Resource Plan, each electric utility shall systematically evaluate and may propose...

And then it says:

Developing a long-term plan for energy efficiency measures to accomplish policy goals of reduction in customer bills, particularly for low-income, elderly, and disabled customers.

And so just taking that section and subject to check, because I know that part -- parts of this question may not be your direct area of expertise, but is it safe to assume that the proposed energy savings that would accomplish policy goals of reducing customer bills, particularly for low-income, elderly, and disabled customers would represent a relatively small, maybe even vanishingly small segment of the Company's overall load demand forecast?

A So when I receive the DSM savings, generally speaking, it's been aggregated up, not at a programmatic level, but at a residential, commercial, and industrial level. So I cannot speak to the specific programs that are built into that portfolio and which customers they serve. That would probably be a question for Mr. Hubbard.

Q Yeah, I'll ask Mr. Hubbard about that. Let me try to rephrase my question.

Is it -- does this -- in your estimation, does this state one of the goals of the IRP process is for the Company to be able to develop a long-term plan for energy efficiency measures to accomplish policy goals, including the reduction of these customer bills who -- whether or not

their data was aggregated before it came to you -- represent a very small sliver of the Company's actual overall demand?

In other words, the IRP has a goal other than cost-effectiveness; is that correct? There are considerations other than cost-effectiveness that are supposed to go into the IRP modeling?

A So are you speaking of the IRP holistically?

Q Sure, sure.

A Yes, I would say that the IRP has other goals besides cost-effectiveness; reliability being probably among the largest.

Q So when you run build plans or when the load forecast is done and the model is run, is it not possible to put in sensitivities that would select for things other than cost-effectiveness, including certain policy directives like this one?

In other words, couldn't a model sensitivity place a value on this sort of policy goal that would incentivize selection by the model regardless of cost-effectiveness?

A So if you're talking about the capacity expansion model, again, that was Mr. Compton's area of expertise, not mine. I do the load

forecast piece, which has the DSM component contained within it. So in terms of the capacity expansion model, I can't speak to how and what can be included in that area.

Q And I'm looking now at the highlighted guideline text, IRP Guideline A. And the highlighted text says that:

In order to understand the basis for the utility's plan, the IRP filing shall include a narrative summary detailing the underlying assumptions reflected in its forecast as further described in the guidelines. To better follow the utility's planning process, the narrative shall include a description of the utility's rationale for the selection of any particular generation addition or demand-side management program to fulfill its forecasted needs.

Can you direct the Commission to where in the IRP the narrative includes a description of the utility's rationale for the selection of any demand-side management program in its forecasted need?

MS. ALLABAND: Your Honor, excuse me, this seems to be more related to the direct testimony. We're looking at the reference index in the

original IRP document. I'm not sure this is proper for rebuttal.

MR. WINSTON: I mean, I don't -- I'm not sure where in the direct testimony it would be relevant. I mean, the subject of Mr. Bocanegra's testimony are the inputs that make up the load forecast, including the DSM adjustment, and we're trying to get at the opacity of that downward adjustment and specifically the lack of specificity with which the assumptions are described, and that's really the subject of the question. I don't even know where in the direct testimony this would be relevant to.

MS. ALLABAND: Your Honor, the prefiled direct testimony, which was originally filed by Mr. Rajan, identified the pieces of the IRP that he sponsored. It was adopted by Mr. Bocanegra. Mr. Bocanegra was waived on direct. And it states right there in the reference index that we're looking at in the far right column where these pieces are in the IRP. And portions of them are sponsored by Mr. Bocanegra.

COMMISSIONER HUDSON: Any response?

MR. WINSTON: No, Your Honor.

COMMISSIONER HUDSON: So let's continue,

but please be careful and make sure it's relevant.

MR. WINSTON: Yes, Your Honor.

THE WITNESS: Can you repeat the question?

BY MR. WINSTON:

Q Yeah, I'm just trying to understand where the IRP describes any rationale for the Company's selection of any demand-side management program.

A So the description of how demand-side management was addressed within the forecast can be found in I believe it's Appendix 2B. There's a section entitled Energy Efficiency. Kind of subject to check, I can't remember the exact subsection title, but that would be where there is some description. But in terms of finer detail in terms of the programs, I believe you would need to refer to the Company's DSM filing that was with the Commission.

MS. ALLABAND: One moment, Your Honor, just a brief clarification.

I believe he was trying to refer to Appendix 3D, as in dog.

COMMISSIONER HUDSON: Thank you.

MR. WINSTON: I was getting very nervous.

MS. ALLABAND: Which is entitled Demand-Side Management. And that's in the direct

case.

MR. WINSTON: That fits in much better with my narrative.

BY MR. WINSTON:

Q So I'm not sure if -- and I don't know -- I don't actually know how to go about this because there's a lot of words on the pages.

But could you be more specific and point to anywhere where it says -- explains the rationale for the selection of any DSM program?

It describes the DSM program, it describes its performance -- well, "described" is doing a lot of work there -- but it has all that information in it, but it doesn't ever describe a rationale for the selection of a single program, does it?

A So, again, the Company used the DSM savings targets that were consistent with its proposed DSM savings targets in its filing that was relatively concurrent as the work was being done on the IRP.

Q But you already testified, when Ms. Grundmann was up here, that the generic DSM figure that's tabulated by the Company does not contemplate any specific demand response program

or option. It amalgamates some customer retention data, some data the Company receives from outside vendors, and it tries to understand sort of what an incremental growth in savings would be, but it doesn't contemplate specific programs; is that right?

A Can you repeat the question or rephrase it.

Q The generic DSM figure that you said the Company calculates in order to come to its final load adjustment number --

A Yes.

Q -- that generic DSM figure does not include within it any delineated program that's either in planning or has a name or has a form or a structure; it's just -- it's just a number that is meant to fill the gap. I think I wrote down your quote. You said that the generic DSM fills the gap between achieved savings and targets.

A That is correct.

Q So what is the significance? Why do we care about that number?

So basically, isn't it true that what that essentially means is that the Company isn't meeting its target and that -- I mean, I can

subtract the percentage that is the savings target from the percentage of savings that's already being achieved and find the delta and then plug that in as generic DSM.

Did the Company do more than that? Less than that? Can you explain what goes into that delta?

A So I think that's an unfair characterization of the generic DSM. The generic DSM, in my mind, is the Company kind of acknowledging that while all the work that goes into developing the DSM programs and building those programs and kind of working to help develop those markets and push forward that market transformation, that there's still a considerable amount that is unknown and cannot be known at this time. And so, therefore, the Company uses that as kind of a stand-in for what we feel we can do moving into the future.

Q I'm going to -- basically the theme for the remaining questions is that the IRP's role is to get at that uncertainty you just testified to.

And now I'm going to try and understand why the uncertainty is being used as a justification by the Company not to include more

modeling. It is -- so we'll go right into it.

Do you see the highlighted section guideline C2?

A As best I can.

Q Yeah. Can you read the text that's in the long block section in the middle for C2? If not, I can read it.

A That would be helpful.

Q Okay. No problem. It says:

Option analyses. A comprehensive analysis of all existing and new resource options, supply and demand side, including costs, benefits, risks, uncertainties, reliability, and customer acceptance where appropriate, considered and chosen by the utility for satisfaction of native load requirements and other system obligations necessary to provide reliable electric utility service at the lowest reasonable cost over the planning period.

Is there an options analysis in the IRP that explains whether or not demand-side options are chosen or not chosen?

MS. ALLABAND: Your Honor, I would just reiterate my objection. It seems we're going back to the direct case here, and he was waived on

direct.

COMMISSIONER HUDSON: Response, Counsel?

MR. WINSTON: Yeah, Your Honor. Again, we're trying to get at the fact that this number that is being called the generic DSM is -- its origins are an enigma. And I'm simply asking if there's anything in the IRP that can explain to us where decisions were made to chisel down the DSM to that number that just snugly fits in right with the target that was just approved by the Commission.

And so I think it is relevant to ask if there's any analysis that Mr. Bocanegra can point to that would justify that, especially because he just testified on surrebuttal that the generic DSM is designed to fill the gap between achieved savings and targeted savings. But that would necessarily imply that there was some element of choice, either selection or deselection, when it came to making up that number at the end of the day.

MS. GRUNDMANN: Your Honor, I would just note that the Company elected to put together Exhibit 68 and put it into the record, and I think, while I understand that this was entered

into the record as a result of questions that I asked on direct in an attempt to clarify this process, it does kind of open the door to attempting to really pare down into what some of the statements here mean.

And I think that that goes to the heart of counsel's question. So, in general, I do agree with the sort of direct is direct, rebuttal is rebuttal, but, you know, when an exhibit comes in that opens up more questions, the only way to ask those questions is after the exhibit has been presented and put into evidence.

CHAIRMAN TOWELL: I'll say, speaking only for myself, I have similar questions as to counsel. So to the extent that the witness can elucidate this, even if it would have been perhaps in certain circumstances more appropriate on direct, I, for one, would like to know more about this.

So if you wouldn't mind, Mr. Bocanegra, that would be very helpful.

MS. ALLABAND: Your Honor, just a moment, to help you with that, Appendix 2A on the load forecast also has a section on -- it's No. 5 on energy efficiency adjustment. But I'll let

Mr. Bocanegra answer your questions, but I just wanted to point that out to you.

CHAIRMAN TOWELL: Thank you, Counsel. I appreciate it.

BY MR. WINSTON:

Q Is there anywhere that you can point us to in the IRP that would show a side-by-side options analysis of demand-side resources and supply-side resources and which ones were selected and deselected by the Company?

A Not that I'm aware of.

Q If demand-side options were modeled as a selectable resource, would there be such an analysis in the IRP?

A I don't know if I can answer that particular hypothetical.

Q Two more guidelines. Guideline D4, top of the page, says:

Discussion of the critical input assumptions to determine the load forecast and expected changes in load growth, including factors such as energy conservation, efficiency, load management, demand response, variations in customer class size, expected levels of economic activity, variations in fuel prices, and

appliances, inventories, et cetera.

And then D5 says:

Discussion regarding cost-benefit analyses and the results of such factors on this plan, including the methodology used to consider equal or comparable treatment afforded, both the demand-side options and supply-side resources.

Isn't it true the IRP did not consider equal or comparable treatment afforded to both demand-side options and supply-side resources based on your testimony and your filing?

A Can you --

Q I apologize, yeah, that was rude of me.

D5, the second one.

A So in terms of these guidelines, I guess I don't quite understand what "equal and comparable treatment" would be.

Q Could it mean that they are treated as -- demand-side options are treated as selectable resources so that they can be pulled on by the model as equal competitors to their supply-side compatriots?

A Again, I don't know if that's what it's saying.

Q Could it be? Would you agree that that

could be a way that they would be considered, with equal and comparable treatment?

A I feel like I would need more time to study these guidelines to be able to speak intelligently on that.

Q Subject to check, what do you think?

A Again, I don't know if I'm the right person to answer that.

Q Impressive.

All right. Couple more questions. I don't want to make any promises.

Are you familiar with this regulation that governs cost-benefit analysis of DSM applications?

MS. ALLABAND: Your Honor, I would just say this is not a DSM proceeding or the cost-benefit analysis --

MR. WINSTON: I'm getting to that, Counsel.

BY MR. WINSTON:

Q You see where it says:

Minimum guidelines to provide direction to electric and natural gas utilities in developing applications for approval of DSM programs are as follows?

A Can you -- let's see. Is that the first

line?

Q Yes.

A Yes.

Q Okay. And then to counsel's nascent objection, it says that:

The assumptions used in developing projected input data and the models used in the Integrated Resource Planning process should be identified and well documented.

Do you see that?

A I see that.

Q So isn't it the case that under the Commission's own regulations, the Integrated Resource Plan is designed to direct -- give direction to the Company in developing applications for approval of DSM programs?

It says:

These are the minimum guidelines to provide direction to electric and natural gas utilities -- that's the Company -- in developing applications for approval of DSM programs.

And then it says that:

The assumptions used in developing the input data and the models used in the IRP should be identified and well documented.

And then it lists certain utility-specific data that should be used whenever possible.

MS. ALLABAND: Your Honor -- I'm sorry, please finish.

MR. WINSTON: No, that's okay.

MS. ALLABAND: I would just say this is calling for a legal conclusion to interpret the Administrative Code.

BY MR. WINSTON:

Q Does the Company use the IRP to inform which DSM applications it files and programs it selects and how in the development of new applications?

A In the development of new applications?

Q Which is what it says right here, in developing applications.

So I'm not asking for ways that the Company uses the IRP to justify already-developed applications; I'm asking for how the IRP, which is a planning document, correct, is used to develop new applications.

A So the IRP forecast does use the end of -- end-use modeling that accounts for what we call naturally occurring energy efficiency. And I do believe that goes into the kind of development of

future energy efficiency programs. But -- so I don't know if you're looking for more in terms of developing energy efficiency programs.

Again, I think most of those are developed in the DSM proceedings, and they are used to specifically look at, in that proceeding, the width and breadth of the DSM portfolio. And it's its own isolated proceeding to give it its own weight.

Q And do you agree that unit performance data, end-use load research data, and market research data are all examples of utility-specific data that could be used in modeling?

A Yes.

Q And would you agree that there are varying levels or strata of quality of that type of data?

A As with every set of data.

Q And more specific data and more of it is generally better and leads to a better model?

A Well, it depends on the relevance. You can -- this is getting more metaphysical about modeling in general.

Q Guilty.

A But, yes, generally speaking, it does, but you can become overly specific.

Q That's all right. I just have a few questions specifically with regard to some of the things you said on surrebuttal in response to witness -- City Witness Freed's testimony.

A Yes.

Q And then I'll close up with just a few things that you mentioned on cross with counsel for Walmart.

You said that there's a risk that PLEXOS underselects not cost-effective programs; is that right?

A Yes.

Q But it's also true, as counsel for Walmart intimated, that with the load forecast that the Company has filed in these proceedings, that its status as a net importer of electricity is likely to be exacerbated; is that right?

A I can't recall if I agreed to that or not, but under the very specific hypothetical that was provided --

Q If the Company's load forecast comes to fruition exactly as predicted, that will be an order of magnitude increase in the amount of electricity that needs to be procured or generated.

A Yes.

Q And so it's going to have to come from somewhere, correct?

A Yes.

Q Okay. So isn't it true, if we're in a constrained market from an energy generation perspective, that prices tend to go up?

A Generally speaking.

Q And in theory -- again, we're all in the realm of a hypothetical in these proceedings.

A Yep.

Q -- if you were able to reduce load by -- I'm just making up numbers -- 17 to 31 percent based on energy efficiency and demand-side management, do you think that would be a critical resource to pursue in an energy-constrained market?

A So --

MS. ALLABAND: Your Honor, I would object to this hypothetical question.

COMMISSIONER HUDSON: Response, Counsel?

MR. WINSTON: I would rely on my previous responses to other objections.

COMMISSIONER HUDSON: Please continue.

And, again, as I instructed you before, if

you're able to answer, you can answer.

THE WITNESS: So I would feel that the particular percentages that were thrown out should be interrogated a bit further to --

BY MR. WINSTON:

Q Would one way to interrogate them be to model them?

A No, I don't think so, not in this particular case.

Q Can you explain that?

A The numbers are coming from the potential study, correct?

Q Yes, yeah, I was being tongue-in-cheek. Yeah, they're from --

A The potential study refers to a lot of different types of savings: technical potential, economical potential, achievable potential.

When looking at that, the potential study is -- I kind of view it as the beginning of dialogue in developing the DSM programs. It's not the end. It has to go through a lot of different processes to get to the end, and that includes everything in the diagram that was presented, to working with Mr. Hubbard's group, to the DSM planning group.

Usually, they are very intimately involved in developing these programs and making sure that they are cost-effective because, ultimately, we're asking our customers to pay for those programs.

Q Sure.

A So it is imperative that they are cost-effective. And so because of that, that particular savings amount may not be what is actually truly achievable, you know. Otherwise, I think they would have moved it into the achievable category.

Q But imagine a scenario where the Company is facing a generation shortfall of 20 percent --

MS. ALLABAND: Your Honor, sorry, I would just ask that counsel not interrupt the witness while he is trying to finish his answer.

BY MR. WINSTON:

Q That's fair. If I interrupted you, I apologize.

A It's okay. But -- so that's kind of what I was driving at, is just that that -- those numbers, I don't know if you can look at the 17 percent and say that that's something that energy efficiency can achieve, particularly programmatic energy efficiency.

Q Okay. So here is the issue that I'm having, then. If this regulation, which I had never said -- stated for the record, is 20VAC5-304-30, titled Minimum Guidelines For Data Input and Modeling Assumptions -- I don't think it's necessary to enter it into evidence -- but it says here that the minimum guidelines to provide direction to the Company in developing applications for approval of DSM programs are as follows.

And then the assumptions used have to be identified and well documented. But the inputs that we're talking about, as far as I can see from the record, come from the potential study. And so my question is: If the potential study's figures need to be interrogated but they are not interrogated in the IRP, they are just used in the IRP for the achievable number, so at what point were those numbers interrogated?

And is it your opinion or would you agree with the statement that such interrogation should happen in the IRP?

A So --

MS. ALLABAND: Your Honor, I'm sorry. I would just object. These guidelines are not

applicable to this proceeding. This is more relevant for a DSM proceeding. There are multiple DSM proceedings throughout the year, including a proceeding to go look at the potential study, EM&V, as well as new and proposed programs. I just do not see how this is relevant here. And it is outside a little bit of the scope of Mr. Bocanegra's testimony.

COMMISSIONER HUDSON: Counsel, can you make it relatable to the IRP?

MR. WINSTON: Well, Your Honor, I think, from a legal perspective, I would disagree with counsel's characterization of the applicability of this regulation. I understand that it falls within a section that's called The Rules Governing Cost-Benefit Measures Required for Demand-Side Management, but as counsel I'm sure is aware, the title of a statute or the title of a regulation is not dispositive. And it very clearly states that there are -- there are contents of an IRP that are expected by this regulation that are relevant to this proceeding.

MS. ROBB: Your Honor, if I may.

COMMISSIONER HUDSON: Yes.

MS. ROBB: I'm just looking at the words

that are on the screen, and it says these are minimum guidelines to provide direction for electric and natural gas utilities for developing applications for approval. DSM programs -- I am not aware that approval of DSM programs is part of this IRP proceeding.

MS. ALLABAND: And, Your Honor --

MR. WINSTON: Yeah, I would just -- in response to counsel for Microsoft's argument, I would just say again, in Subsection 1 it says very clearly that we're talking about the input data and the models used in the Integrated Resource Planning process. If we're not allowed to discuss those inputs in the IRP process, when we get to the DSM process, I'm going to say, well, let's look at the IRP, but we'll have to look at the transcript of this proceeding to find that I wasn't allowed to ask about it in this proceeding.

MS. LINK: Your Honor, if I may, this is day five. I've been involved in every DSM proceeding the Company has filed and every IRP the Company has filed since 2009. It is very well established that these guidelines are part of DSM proceedings and that the IRP is the base for DSM proceedings. And we go through these issues in

the DSM proceeding every year for the last 15 years.

So with all due respect to Mr. Winston, I believe we are wasting the Commission's time focusing on something that is truly irrelevant to this proceeding.

MR. WINSTON: Obviously, if that's the counsel's position, then I'll stop -- I mean Commission's position, sorry. I usually work in local government.

MS. LINK: I appreciate that, Mr. Winston.

COMMISSIONER HUDSON: Do you have any other questions that you'd like to ask before...

MR. WINSTON: I just -- just a few questions about customer attrition and customer fatigue.

COMMISSIONER HUDSON: Let's focus on that.

MR. WINSTON: Okay. Sure, Your Honor.

BY MR. WINSTON:

Q There was a little bit of questioning in your -- the cross from counsel for Walmart about the customer fatigue analysis that was conducted by the Company.

And I just want to know, is the Company meeting its customer penetration targets?

A Again, I think that gets outside of load forecasting in terms of, like, DSM performance.

Q It doesn't go into the sales and revenue forecasting, how many customers participate in a given proceeding -- in a given program?

A So at a high level, yes, we remove the DSM savings and projected incremental DSM savings, but in terms of looking at those numbers down to a participant level, no, we don't look at those. In fact, we can't measure something that didn't happen. So we're looking at energy usage and you're talking about usage that didn't occur.

Q Correct me if I'm wrong, doesn't the Company report participation levels by the number of customers who adopt a program in the IRP? That's -- contradicts what you just said.

A So in the IRP?

Q Yes.

A Can you repeat the question?

Q Yeah. You said that at a high level, the level of customer participation factors into sales and revenue forecasting but not when you get down to the number of individual participants.

My question in response to that was, but isn't it true that the Company and the IRP, in

fact, does report its customer participation levels by the number of customers who are participating?

A So the historical participation numbers?

Q Of the active programs, yes.

A I think that is correct.

Q And are the -- those participation numbers meeting, in general, the Company's participation targets?

A When you get down to the specific questions about DSM programs, those questions should be directed to Witness Hubbard.

MR. WINSTON: Okay. Nothing further, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. FARMER:

Q Good morning, Mr. Bocanegra.

A Good morning.

Q John Farmer, with Consumer Counsel. I just had a couple follow-up questions on your surrebuttal comments quite a while ago now.

A Sure.

Q You were discussing the double-dipping issue with data centers, correct --

A Yes.

Q -- in surrebuttal?

And you discuss two types, and I just want to refer to the second type you mentioned, which is data centers pursuing multiple sites, correct?

A Yes.

Q Okay. And I believe I heard you say that the Company is taking steps to address this.

Did I hear you say that?

A I said that PJM is taking steps to address it and that Witness Blackwell can speak to the Company's efforts in detail.

MR. FARMER: Okay. Thank you. No further questions.

CROSS-EXAMINATION (Reb.)

BY MS. PIERCE:

Q Good morning. Kiva Pierce, with Commission Staff.

A Good morning.

Q I do have a few questions. First I'll generally ask, were you in the proceeding last night when Dr. -- when Mr. Compton testified?

A Yes, I was.

Q And I had several questions for him that he referred to you.

Do you recall that?

A I do.

Q So some of my questions will relate to that.

First, I'm going to put up -- this is page 4 of your rebuttal testimony.

A Yes.

Q And here you're discussing how the Company adjust the PJM load forecast --

A Yes.

Q -- to get down to the DOM LSE.

And my understanding -- I believe this is correct -- that you start with PJM load forecast and then you scale it down to the DOM LSE; is that correct?

A That is correct.

Q And would you agree with me that, historically, the PJM load forecast that is your starting point has historically been 15 years?

A Historically, yes.

Q Okay. Is it your understanding that, even though that PJM load forecast has historically been 15 years, the Company has been able to provide, in other IRP proceedings, a load forecast that went out to 25 years?

A That is correct.

Q Okay. Thank you. And now, we were just discussing historically it's been 15 years, the PJM load forecast.

Are you aware that in 2025 -- this is explained in Exhibit 50 and there's been some testimony about it already in this proceeding -- but as of this year, PJM has gone to a 20-year load forecast.

Is that your understanding?

A Yes.

Q With that change in PJM's load forecast, does the Company plan to -- if we're starting with PJM, it's now 20 years.

When you scale down to DOM LSE, is that going to be 20 years going forward?

A It's definitely doable. There's nothing preventing.

Q Okay. And would you agree with, me since PJM load forecast is 20 years, it makes it easier for the Company to scale down to the DOM LSE in a 20-year time frame?

A I would say that it is easier.

Q Okay. All right. Thank you for that.

I'm going to place page 4 back up. And I just want to very briefly focus on the piece about

the data center load growth.

Is it your understanding that the data center load forecast is based on historical metered data?

A So in this context, are you speaking about PJM's DOM LSE data center forecast or the Company's?

Q Well, same question for both.

A So for PJM's -- due to the nature of kind of PJM's process, while it is kind of public in terms of the load analysis subcommittee, the ultimate modifications and changes they make are -- like, their methods aren't exactly known to us. So the discretion that they exercise isn't known.

In terms of the Company's forecast, I can speak generally about that, but Witness Blackwell can speak at length about the process.

Q Okay.

A But, yes, he uses metered load for that, is my understanding.

Q Okay. So I would assume, then, the Company's position is that that is a good way to measure that for -- that future demand is by looking at the metered --

A Yes. In fact, recently, in some of the meetings with -- with PJM, they have specifically mentioned that the Company has had fairly accurate data center forecast over the last years.

Q And that implies that the Company has all that information about the meters and the numbers and all that information to create that forecast; is that fair?

A That's fair.

Q All right. Thank you. Now, I'm going to turn briefly to Mr. Compton's rebuttal testimony yesterday. There was discussion about the interplay of the IRP and the RPS proceedings.

Do you recall that?

A I do.

Q Okay. And his testimony was that they're -- and I'm paraphrasing, so I'm not quoting, but essentially that the two are interrelated, the methodology and the modeling and the forecasting for IRP is similar, and this year they were filed at the same time.

So they're very integrated, those two planning processes.

Would you agree with that?

A At a general level, I've not been a

witness for the Company's RPS filing.

Q Sure, and I understand. So to the extent you can answer these questions, I appreciate it.

So in the RPS case, the Commission, this week, came out with an order. And in this order it directs the Company to do certain things for the future RPS case, right? And I realize RPS, IRP different, but we're talking from a background that they are interrelated as far as the modeling and PLEXOS and forecasting. Okay?

So on page 2 it begins to say that -- well, some of the things that the Commission orders the Company to do. Number two is a plan where all carbon-emitting generation is retired by 2045 and locational modeling is at issue in this case.

You would agree?

A Yeah.

Q All right. Then the next paragraph, it says:

To the extent practicable, locational values of future RPS resources, which includes solar, wind, and storage resources.

Do you see that?

A I do.

Q And, again, modeling out to 2045 -- I'm sorry -- modeling locational value is an issue in this case as well.

Would you agree with that?

A From the look of this, it appears.

Q Yes. Thank you.

So my question is, if the Company is going to have to run these type of models and analysis for the RPS, won't it make it easier for the Company to include that in future IRP proceedings?

A So, again, my area of expertise is in the load forecasting. I can talk about the load forecasting aspect of that. In terms of the capacity expansion modeling, I can't speak with any, you know, authority on that.

Q Okay. But as far as load forecasting, would it make it easier?

A I don't know if it would make it easier in the sense that the load forecasting -- with a model you can get it to -- get it to spit out however many years into the future you want it to do. It's just a matter of acknowledging and identifying the fact that, the further you go out in time, your uncertainty increases drastically.

Q Okay. Fair point.

But you would agree with me that, if the Company is doing it for the RPS, it will at least have that information available to it the next time an IRP case is filed?

Would you agree with that?

A I would.

MS. PIERCE: Okay. Thank you. No further questions, Your Honor.

COMMISSIONER HUDSON: Dominion, any redirect?

MS. ALLABAND: Yes, Your Honor.

REDIRECT EXAMINATION (Reb.)

BY MS. ALLABAND:

Q Good morning, Mr. Bocanegra. How are you doing?

A Doing okay.

Q Okay. Just a few follow-up questions based on some of the questions you've had earlier.

First, I want to start with I think it was counsel from Walmart was asking about your prior experience and your load forecasting experience.

A Yes.

Q And who did you work for prior to the Company?

A AES Indiana.

Q And who was that? Can you explain who they are?

A They are Indianapolis Power & Light. So kind of the utility, the power company for Marion County, a little bit of kind of the area south of Marion County as well.

Q And did you work for anyone else prior to that?

A Before then, I was employed by DNV, which is an energy efficiency evaluation consulting firm. Prior to that, I worked for National Grid, a utility in Massachusetts, doing both load forecasting and energy efficiency evaluation. And prior to that, I was with the Massachusetts Department of Public Utilities.

Q Thank you, Mr. Bocanegra. All right. So I want to put up Exhibit 68.

And as counsel noticed earlier, several counsel, that there is no IRP witness for that demand-side planning box that's the second box on this page; is that right?

A That's correct.

Q And is that because, I think you said earlier, there is overlap, both between your team, which is that third box, and Company Witness

Hubbard's team, which is the first box, with that second box and that team?

A That is correct.

Q So you and Mr. Hubbard can answer for that second box?

A Yes.

Q Okay. All right. And I think it was Sierra Club -- going back a little ways -- was talking to you about whether or not pausing or delaying data center load would lower the forecast.

And would you say that the low-load sensitivity, while not necessarily a pause, shows a potential delay or a decrease in load and so it shows maybe part of what that scenario would have been?

A Yes, I would.

Q Okay. And I think it was Walmart counsel asked you a question when you were discussing DSM as a supply-side resource, and you had said PLEXOS might select less. I think she asked you how, but you did not get to elaborate on that.

Can you elaborate now on how you know that PLEXOS might select less DSM if it were a supply-side resource?

A During my time with AES Indiana, we did model DSM as a supply-side resource in our IRPs. In that time, the model would routinely not select different DSM programs or bundles because you end up having to bundle them together. And due to the various economic considerations that, you know, if you have a situation where gas price goes low enough and you can fire your gas plants at a relatively cheap rate, it might not select some of these kind of energy efficiency programs.

Q Thank you, Mr. Bocanegra.

And sticking with that topic of DSM as a selectable resource, I think it was the City was asking if there was anywhere in the IRP where DSM, as a selectable resource, was compared to other resources, and I'll put it on the screen.

Do you recall this Appendix 3K-1, which is entitled Comparison of Per Megawatt-Hour Costs of Selected Resources?

A I'm generally familiar with it. I don't think I put this one together.

Q No. But would you say that these lines up at the top are DSM programs? I know you're not particularly familiar with the specific programs themselves --

A I would say that those are energy efficiency programs.

Q And there are costs over here, both no RECs and with RECs, there's a column for that.

And then down at the bottom, you can see more, but also, you know, the resources, batteries, storage, nuclear SMRs, CTs that were included in the IRP as selectable resources?

A Yes, I do.

Q And I think both the City and Walmart asked you about attrition and future attrition and whether or not that is captured in the load forecast and the reduction that you make.

So would you say -- and you mentioned EM&V, I think, when you were speaking with Walmart and that the EM&V, which looks at the historical, does take into consideration attrition and other factors.

And so would you say that this could be included in those future projections that are in the load forecast?

MS. GRUNDMANN: Your Honor, I'm going to object to this line of questioning. I mean, the question asked him very specifically was, do you know what analysis was done to assess the future,

and he says, I don't know.

So it's different if she were to put in front of him something that says, hey, were you aware of this, like she did with Appendix 3K. But coming up with an opportunity to ask questions isn't an opportunity to re-ask my questions but to rehabilitate them, which she's not doing. She's, essentially, re-asking my question, which he already indicated he doesn't know.

MS. ALLABAND: Well -- and, Your Honor, I think she asked this question multiple times and we went through that, and his answer initially and repeatedly was the EM&V reports look at historical, and we'll get to the other part in a moment.

COMMISSIONER HUDSON: Please proceed.

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q So, Mr. Bocanegra, as you were saying, the EM&V reports, can you elaborate on how the historical is included in the projections? And we'll get to the other piece in a moment.

A Again, I'm not exactly the kind of DSM -- you know, the people who do that part of the work. I am familiar with it. But in the end,

frequently, when you're developing a new program, if you're looking at various impacts, is usually what they're calling it, so related to attrition rate, hours of use, you know, those kind of -- those kind of things.

You would look at your EM&V to gauge what the future program would look like so that you could study its cost-effectiveness. You would also kind of interact with engineers or experts in that field, the vendors, and that goes into Mr. Hubbard's expertise of what they think the savings would look like.

Q Thank you, Mr. Bocanegra.

And the second piece I want to ask you about, are you aware if PJM has a price elasticity component in its forecasting model and could that represent a customer fatigue or attrition rate?

A Yes, they do.

MS. ALLABAND: Thank you, Mr. Bocanegra. Those are all my questions.

COMMISSIONER HUDSON: You're now excused.

THE WITNESS: Thank you.

MS. ALLABAND: Your Honor, the Company is going to call Mr. Blackwell next. I imagine he might have -- well, he does have quite a bit of

surrebuttal, and then I imagine a lot of people have been waiting to speak to him. I didn't know if the Commission would like a break before we start or I'm happy to start right now.

COMMISSIONER HUDSON: Let's start right now.

MS. ALLABAND: Of course, Your Honor.

Company calls Stan Blackwell.

STAN BLACKWELL, called as a rebuttal witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MS. ALLABAND:

Q Good morning, Mr. Blackwell.

A Good morning.

Q Will you please state your name, position of employment, and business address.

A My name is Stan Blackwell, and I'm the director of the data center practice for Virginia Electric and Power Company. My business address is 600 East Canal Street, Richmond, Virginia 23219.

Q And do you have with you a document entitled Rebuttal Testimony of Stan Blackwell, consisting of a one-page summary, 23 typed pages

of questions and answers, an Appendix A, and one rebuttal schedule which was filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q And was that document prepared by you or under your supervision?

A Yes.

Q And do you have any corrections or additions to that document?

A No, I do not.

Q If you were asked the questions appearing there, would you provide the same or substantially similar answers?

A Yes.

Q And do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes, I do.

MS. ALLABAND: Your Honor, I'd ask that the Rebuttal Testimony of Stan Blackwell in public version only be marked for identification and admitted into the record, subject to cross.

THE BAILIFF: The Rebuttal Testimony of Stan Blackwell will be marked as Exhibit 69.

(Exhibit No. 69 was marked for

identification.)

COMMISSIONER HUDSON: The rebuttal testimony marked and described as Exhibit No. 69 is admitted into the record, subject to cross-examination.

(Exhibit No. 69 was admitted into evidence.)

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q Mr. Blackwell, have you been listening to the hearing since Monday?

A Yes.

Q And do you wish to address some of the opening statements and the testimony you've heard?

A Yes. I'd like to address three topics for the data center portion of the hearing, data center business, and those would be double counting, our contracting process, and demand-side management.

Q Okay. And starting with the first one, double counting, Company Witness Bocanegra responded earlier to Mr. Wilson's statements about double counting in the forecast, and he described the process PJM goes through.

But can you elaborate on your process

before you submit to PJM?

A Yeah, the -- yes. So I believe Witness Wilson described two types of double counting.

What I would put forward is, the issue about double counting, there aren't really two types, there's one type. And the way we address that in the forecast is through contracts.

And so everybody in this courtroom could ask to develop a data center project. I, in turn, or the Company, in turn, would say, here is an engineering contract, it requires a deposit of $250,000, it requires a site plan, land control, and a request of what you would like the Company to build. So we would put that contract in front of all the data center projects in this courtroom.

Some of you would not sign that contract and render that paycheck, so that eliminates potentially half the courtroom for double count. The rest of you would render a deposit, provide that information, and the Company would embark upon a 9 to 12-month engineering study, detailed engineering study about the specifics of each person's -- each project's individual specifics.

At the end of that 9 to 12-month period, we would present individually to each of those

projects, this is what the Company is going to build, this is when we can energize it, typically four to seven years from the point you sign the engineering contract; and these are the costs and the infrastructure the Company is going to put in the ground. Would you like to proceed to construction?

And we would ask -- half the courtroom now still has a project. Some of those are double counts. And all we've done at that point is executed an engineering contract. We've done a study.

At the end of that, we ask each of those, would you like to proceed to construction? These are the costs we're going to put in the ground to serve you, here's when we will serve it, would you like to proceed?

Because you will be obligated to do two things: You'll be obligated to reimburse the Company for any investments we put in the ground if your projects cancel, that ranges from about 25 million to 200 million. So you'll be obligated to reimburse that if we put iron in the ground and you back out. Or if you continue, it obligates you to sign an electric service agreement.

So when we present that construction contract, that's Contract No. 2 to you as a project. We find folk at that point, when you lay a contract that obligates you between 25 to $200 million, a vast majority of the other half of this courtroom will make a decision. Do I have an end user? Is this investment worth it for my company as data center developer? And many of them won't sign.

And so the point of this is, the ones that sign the construction contract, to obligate them to be responsible for company investments, set a meter, and take service, those are serious customers. And that process eliminates double count.

The double count are those folks that put in a request but don't take it to meter set or don't take it to construction.

So if you have a sound contracting process, you will eliminate the double count. It defies logic to me why somebody would sign a construction contract -- and in my rebuttal testimony, I had a reference for a 60-megawatt -- it was a footnote for a 60-megawatt data center that cost about 595 million -- that's the average,

they gave a range -- $595 million to bring a 60-megawatt data center out of the ground.

Now, I don't know if our 25 to 200 million is in that range, but, you know, $595 million is a lot of money. And I find it hard to believe somebody is going to build a double count facility with no expectation to use that -- the assets or that investment.

Q Thank you, Mr. Blackwell.

Just to clarify the record, when you were talking about the engineering contract, that would be the SELOA?

A Yes, thank you.

Q And those SELOAs are not included in the forecast?

A That is correct. None of our three contract structures are included in the forecast. We do not forecast by contract. That is another way -- if you forecast by contract, you will forecast double counts. That's why we don't forecast by contracts. We use our contracts to validate the forecast.

Q Thank you, Mr. Blackwell.

And in addition to the contract structure that you just described for us, the SELOA, the

CLOA, and the ESA, can you also describe how your experience, both forecasting and working with these data centers, has also helped you not to include double counting?

A Yeah, so let me give you a little background, which is in my rebuttal testimony.

We start with statistical forecasting over 10 years of metered data for every single data center count the Company serves. We have that for over 10 years by month for every single account. That's approximately 450 metered accounts in over 50 data center customers. So we have that.

In my rebuttal testimony, we take the largest eight customers and we do a statistical forecast on each of those eight customers. And, remember, I said we have over 50 total customers. So we take the remaining 42 and we forecast those as a group.

Now, of the eight, they're our largest or fastest-growing customers, and so the remaining 42 are everyone else. That also -- by forecasting the remaining group, you also eliminate double counts.

So if there were 42 people in here, they are not the top eight, and they are all submitting

projects, they are not all going to win a project. One of them is going to win.

And so if I forecast them as a group, historically I will eliminate double counts because I will -- doing that does not assume they are all going to win a project and proceed.

Q Thank you, Mr. Blackwell.

And sticking with the double counting issue, does PJM just accept the data center forecast that you provide them?

A No, they don't. In fact -- I'm trying not to laugh, but this proceeding, at least the questions, are a little bit adversarial questions over this week. It's very similar to the PJM process.

So we're asked to submit a forecast. We don't have commissioners in PJM -- in this PJM call, but we're asked to submit a forecast. It is a public forum that all the utilities that submit large-load forecast, data centers in my example, have to defend that in a public forum. So there's several hundred people on this call.

Anybody that's a registered participant of PJM can ask questions. Very similar to what we're experiencing today, the attorneys are the

registered participants.

So anybody in there; that could be utilities, PJM, consultants, it can be independent power producers, solar developers. If you're registered as PJM, you have the right to ask each utility, in this case Dominion, questions about our large-load forecast.

And so I have had the opportunity to present and defend that forecast for over five years now at PJM.

PJM's process, at the end of that, you take questions, you answer those questions, very similar to this, and then at the end of that process, PJM, it's my understanding, takes the feedback, the information submitted by Dominion, the feedback -- or answers to the questions, and they then process that to determine, adjust, whatever their process is, very much like the legal process here, you take the legal feedback, and you render a decision based on everything that's shared.

PJM does the same thing, they take that information and then return -- here is your official DOM Zone forecast. They don't say, to my knowledge, here's your official data center --

they may now break out the large loads but they then render, here's your DOM Zone forecast.

And I believe you've shown on the screen -- just about every attorney has -- the process where we -- the load forecasting group breaks that back down into the DOM LSE.

But that's the PJM process, very similar to what we're seeing today.

Q Thank you, Mr. Blackwell.

I want to turn now to the contracts that we spoke about a little bit earlier.

And were you listening to Piedmont Environmental Council's opening statement on the first day when he referenced the contracts the Company signs with data center customers?

A Yes.

Q And he said something to the effect that there is no Commission oversight, and that's why they are worried about what he terms a crisis by contract.

Were you listening to that? Did you hear that?

A Yes.

Q And counsel from Piedmont Environmental Council has asked several others about an archived

article from, I believe it was 2021, that mentioned the Company partnering with data centers. This was Exhibit 60.

And he specifically asked about that last line:

Dominion Energy is not just the electric utility, we are a true partner in growing your data center footprint.

Do you have any response to -- if Mr. Jaffe were to have been here, to ask you this question?

A Yeah, I have a comment.

Our goal is to partner with all our customers, not just data centers. This exhibit is from, I believe, our economic development website. Since we are the largest market in the world, we get a tremendous amount of interest in developing data center projects in our territory. Economic development is good for the Commonwealth, and so this document is on our economic development website.

My point being is we're a regulated monopoly. We are the only source for the wires business.

And customers don't have a choice in that,

but it makes a lot of sense to be a partner with your customers and work with your customers to make their experience with Dominion as pleasant as possible.

The opposite of that is to be adversarial. I don't think I would put, on a website, our goal is to be an adversary to connecting you to our system. So we strive to be a partner and work with our customers.

Q Thank you for that context, Mr. Blackwell.

And before you explain the contracts, Mr. Wilson talked about his understanding of what those are, and I think it was Ms. Robb asked him if he had ever executed one of these contracts. I think his answer was no but that he had seen some.

And can you explain your experience with these contracts?

A Yeah, it will take a little time because I have an extensive history.

So back in the early part of my career -- that's been the mid-2000s -- I was -- I led the department where the contracting function was under, and so I was responsible for the Company's contracting process.

During that time, we were starting to

see -- that was right at the beginning of the data center industry. Once you got into around 2012, '13, it started growing significantly. And all of a sudden it became apparent to us, as a utility, there's something here. And we started to see the size of the load request increase, and so I had to get actively involved in contracting with data centers because the volume and the size of the requests were getting ever larger. That was kind of the beginning.

Now, a standard request today is 300 megawatts. That's our standard data center build. Back then, it was about 25 megawatts. But for a utility, that was big at the time.

So the point is, I have been working with contracts. Unlike Mr. Wilson, I have been working with our data center industry since 2013, even before in the contracts, and so I have negotiated a large number of contracts, I have put into place changes in those contracts to address changing business issues over that period of time.

And I also put into place the three-contract structure. At the time, back in 2013, we had one contract. It was an electric service agreement. Today, we have three, because

it's very important to determine which project is serious. And a construction LOA that obligates you between 25 and $200 million, to me, is a pretty serious commitment on behalf of a customer.

And so I had been involved in all the stages of those, including revisions in terms and conditions that went before the Commission to make sure we're serving this business fairly for all rate payers.

A little anecdote, I've been in -- sitting in here since Tuesday and, during that time, I've had three different e-mails that I've had to address with regards to data center contracts while we're sitting here. And that's a typical week for me. So unlike Mr. Wilson, I have a very extensive experience negotiating directly with data center customers.

Q And do you have a response to PEC's implication in their opening statement that the contracts that we've been talking about are secret backroom deals that need Commission oversight to protect other customers?

A A lot of adjectives in that. But, no, I completely disagree with that. So we are a regulated utility and we're building big

infrastructure. Again, 25 to $200 million.

And so there's no negotiation on what it cost, so when a customer asks, could -- I want 300 megawatts, 300-megawatt campus, the Company determines what it will build to serve that contract. There's no negotiation. This is what it requires, according to our standards, to serve that level of load.

The second thing we do is provide a cost estimate. There's no negotiation. I'm going to build a substation, I'm going to build a quarter mile of 230,000-volt transmission line, I'm going to build distribution circuits from the substation, here's the cost. There is no negotiation.

Finally, because I have to build all this infrastructure, we provide a timeline. Our current quoted timeline from the day you sign a substation engineering letter of authorization is four to seven years. From the day you sign that, we're quoting four to seven years. The range in there depends on where you are. If you're in a rural community that is friendly to economic development data centers, you're going to be near four years. If you're in a dense urban

environment where there's no green space, it's going to be seven years.

And so we quote that. And every data center customer I've ever negotiated a contract with, this is the conversation: That cost is a little high.

Yes, it is. That's what you're asking me to build.

Second one is, I'd like service in two years.

I can't provide you 300 megawatts of service in two years. The estimate from our year-long study is seven years, four years, whatever the time period is.

I'm not quite sure where there's negotiation in that process. It defies logic to me. They are all facts that we place in the contract.

I'll make one other comment about -- I think it was Mr. Wilson brought it up similar to this -- are the backroom deals.

We have a standard contract; I believe we provided templates. And Mr. Wilson, on the stand, said, well, you know, that's not a redacted version, so, you know, it's useless. I'm

paraphrasing.

Well, if I take a standard contract with fill in the blanks, or I take the same contract and mark out the customer's name and customer specifics, the language in that contract doesn't change. And the point I'm trying to make is we use a standard contract for all customers. We do not negotiate clauses in that contract.

I will also tell you, every time we render a contract -- a construction contract to a data center developer, they employ attorneys, and attorneys like to redline contracts.

And we tell them up front, we're happy to review your edits, but you need to know going in, we are not substantially changing this contract.

And so what we tend to find is for some reason we change the word "there" to "therefore" and similar words like that, but the fundamental contract in there does not change, so I don't know what we're negotiating as a -- in the secret backroom deals that don't happen.

Q Thank you, Mr. Blackwell.

Let's turn to some of those contracts now.

And let's start with the SELOA that was attached to Exhibit 9, which you sponsored, right?

A That is correct.

Q Okay. And I think you mentioned some of what the purpose of the SELOA is earlier in your discussion, but can you just refresh our memory, what is happening at the SELOA stage?

A That is a contract we get -- we have today, in our hands, roughly 10 gigawatts of load letters. They are not under contract. Everybody today wants to be a data center developer. You, Ms. Allaband, may have a family farm that you decide you're going to get rich and become a data center developer. We have those folks calling us. We have sophisticated developers, never built a data center, that are now entering the industry. We have real estate firms, and we have experienced data center operators.

All of those people are requesting us to build something. The purpose of this substation engineering letter of authorization is to say, would you like for Dominion to do a formal engineering study for your project to tell you the cost, the timing, and what we will build? Would you like to do that?

In my example, Ms. Allaband just wants to sell her farm. She's probably not going to sign

that contract. In fact, that's been our experience, because it requires a $250,000 deposit.

And so the purpose of this project is to decide who is serious enough for the Company to do a nine to 12-month engineering study. That is the purpose of that. It is not to forecast with. It's to, do you want the Company to perform a nine to 12-month study? That is the purpose of that contract. It's no commitment to build on the customers part or the Company's part. It's a commitment for the Company to do an engineering study.

MS. GRUNDMANN: Your Honor, briefly. With respect to this surrebuttal, my understanding is that the original point to which he was responding was the discussion of whether the original contracts themselves had any merit that I think Jim Wilson had mentioned. But I guess I just want to make sure, surrebuttal is meant to respond to the things that other parties have said in this proceeding, and I believe much of the substance of these comments are confined within his actual rebuttal testimony.

And we have been here for five days, so

from my perspective, I object to the extent that we appear to be moving beyond actual responses to comments from parties in this proceeding. And just out of an abundance of time, I'd ask that we just kind of stick to the true subject of surrebuttal.

COMMISSIONER HUDSON: Counsel, what are you rebutting on --

MS. ALLABAND: Your Honor, Mr. Jaffe, from Piedmont Environmental Council, put these contracts into evidence with Mr. Compton on direct, even though Mr. Blackwell is not going to be up until rebuttal. He asked many other witnesses, Mr. Wilson, Staff, and other respondents about various portions of these contracts. And, unfortunately, Mr. Jaffe is not here to ask those same questions of Mr. Blackwell.

So Mr. Blackwell is responding to various Staff and respondents who put their interpretation of what these contracts are and what is the purpose of them and what is the Company doing with these contracts into the record. And I think Mr. Blackwell should be able to respond, as he is the one who is negotiating these contracts with all of these customers, and explain their purpose

and what is being done with them by the Company in order to explain kind of the inaccuracies we have heard from the other witnesses who are not familiar with them.

MS. GRUNDMANN: Your Honor, I would just note, it's a written document, it's a contract, it speaks for itself. And I do think there's a little bit of a difference between going down a rabbit hole of whether an owner of a farm is going to sign an engineering letter of authorization. I understand that Mr. Jaffe asked those questions and, presumably, if he were here today, he might have asked them; and then in follow-up, counsel would have been certainly capable of asking any responsive questions.

But I do have some concern that we have gone well far afield of what I view as the somewhat limited questions from Mr. Jaffe, other than mostly just admitting these documents into the record.

MS. ROBB: Your Honor, if I may, I also believe that the contracts have been mischaracterized such as you can't put energy efficiency, can't put demand response, and you can't negotiate everything you want. And I find

Mr. Blackwell's testimony to be responsive to those discussions earlier in the proceeding.

COMMISSIONER HUDSON: Counsel, please proceed.

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q Mr. Blackwell, speaking specifically about the SELOA that we were talking about, is it -- I know you're not an engineer, but you work through these contracts and the data center customers.

So is it your understanding that the SELOA and the study that the customer's contracting for and paying the money to the Company to do is designed to ensure and determine what the Company must do to build infrastructure, the substation and transmission line distribution, in order to safely and reliably connect that customer and also to determine the timeline of when that would be available?

A Yes.

Q Okay. And this was Exhibit 10 that Piedmont Environmental Council answered -- or entered into the record.

It was also answered by you?

A Yes.

Q Okay. And this is the CLOA. I take Ms. Grundmann's point, we have been here all week.

So if you could briefly explain the purpose of the CLOA.

A The purpose of this is, when we complete the study, present the findings of that to the customer, we then ask the customer, would you like the Company to construct the facilities we've identified on the timeline we've identified at the cost obligation we've identified? Would you like us to build that?

If you would, execute this contract and we will start that process.

Q Okay. And once the Company and the customer execute the CLOA, the Company starts construction, right?

A Not immediately. You have to secure permits. If transmission is involved, in most cases you're required to file a CPCN. So there is a lot of work to do before you get to the stage of the construction. Construction usually starts a couple of years after the signature of the construction letter of authorization.

You have to order equipment, you have to get regulatory approval, you have to get local

permits. And so the process to construct starts, but the physical wrench turning usually is a year or two later.

Q And you mentioned that part of that early process after signing the CLOA was going to the Commission for approvals. As you said, most of these are large projects and require a transmission line, substation.

And are you aware of whether or not, in those applications before the Company starts constructing and gets approval from the Commission, information about the need for the project, what the customer is requesting, the Company's estimated in-service date, and if those kinds of information are before the Commission in those individual applications?

A It's my understanding, if we're required to file a CPCN, all of those are relevant facts filed in that case.

Q Okay. And next contract, the ESA, which is attached to Exhibit 11, you also sponsored this discovery question?

A Yes.

MS. GRUNDMANN: Your Honor, I'm going to renew my objection. Typical surrebuttal said

Witness X said Y. Do you agree or disagree with that, please comment.

The question she just asked is exactly the way a party would get up on the stand and ask cross-examination, have you seen Exhibit 11? Do you have any comments on it?

This is not within the scope of common surrebuttal. On top of that, he has testimony right here about what the CLOA is. And quite frankly, Your Honor, if Ms. Robb has questions she wants to ask because she believes it's been misconstrued, then the opportunity to do that is when she asks cross.

We are literally going back through his entire testimony, and I waited because I allowed -- you allowed them to proceed, and so then I waited, as she moved to the next, I waited for her to say, and so Mr. So-and-so said X in their direct testimony, do you have any comment? But that's not what happened.

And so no party to this proceeding has gone through these documents in the manner that counsel is doing now. And I don't have any problem, if it comes up in the context of direct exam, if then she says now the door has been

opened. But this is, essentially, cross-examining her own witness, and he had two opportunities to present testimony in this case where he could have walked through, and I believe has, the very scope of these agreements. So I continue to object that this is not proper surrebuttal from the stand.

COMMISSIONER HUDSON: And, Counsel, do you have any specific questions?

MS. ALLABAND: Yes, Your Honor. We are going to talk about specific provisions that were asked about to other witnesses in the ESA to clarify some points for the record.

COMMISSIONER HUDSON: Okay. We're going to get there soon?

MS. ALLABAND: Yes, we are going there now. Thank you, Your Honor.

BY MS. ALLABAND:

Q Okay. So, Mr. Blackwell, just going to put the ESA on the screen because that's what we're talking about for now. But Mr. Wilson suggested that the ESA contract has no minimums.

Do you agree?

A No, I do not.

Q Can you please explain what is in this contract that does -- is a minimum?

A There is -- I believe it's several pages down in this exhibit, but you'll see the terms "contract dollar minimum," and that mechanism is defined in the Commission-approved terms and conditions. And the purpose of that mechanism is to, when the Company installs capacity and the customer's meter is not spinning, it establishes a minimum bill for that capacity.

Q Thank you, Mr. Blackwell.

And one respondent brought up the -- the Q4 earnings call and the 40 gigawatts of contract.

Are those 40 gigawatts of contracts ESAs that you're signing?

A No.

MS. GRUNDMANN: Your Honor, I object. To my knowledge, at no point in this proceeding was that brought up. If it was raised, it was raised in the context of testimony filed by intervener witnesses or Staff, and the Company had an opportunity in rebuttal testimony to address that.

So to my knowledge, there has not been a single question about the earnings call in this proceeding.

MS. ROBB: I disagree, there's been several mentions of the earnings call.

MS. ALLABAND: I would agree, there have been several mentions of the earnings calls, the additional 19 gigawatts of SELOAs that have been signed since -- between July and December, which with additional CLOAs, ESAs as the contracts move forward, get us to the 40-gigawatt number that was mentioned.

COMMISSIONER HUDSON: So, again, any specific questions to any respondents' rebutting on surrebuttal that you have?

MS. ALLABAND: Okay, yes.

COMMISSIONER HUDSON: Let's go there.

BY MS. ALLABAND:

Q Okay. Turning to some more provisions of the ESA several respondents and Staff witnesses were asked about, counsel for PEC asked Staff Witness Curtis about the service voltage and effective dates provision; and let me turn to that. And he asked if the Company consulted with Staff on the in-service date or voltage that went into this contract, the fill in the blanks here in this provision.

Do you wish to clarify anything?

A That's an interesting question. The answer to that is no, because the customer is the

one that requests the service voltage and the customer is the one that requests the in-service date. However, the Company determines the in-service date based on that engineering study, which determines what we have to build and how long it will take to build, four to seven years.

And so, no, we don't ask the Staff that. We ask the customer, what service voltage would you like? And why that's important is all of the Commission-approved tariffs -- and that's, in general, GS-3, 4, MBR tariffs -- they are designed around the voltage the customer's taking service from: primary, secondary, above 500 kW. That's why we ask the customer, how would you like to be served?

Q Thank you.

During Ms. Link's cross of Mr. Wilson, I said that there's no remedy in the current ESA if the customer contracts for a certain amount of load, for example, 300 megawatts, but ultimately uses less, in this instance, say 200 megawatts.

Is that true?

A That is not true. The customer has two options -- any customer, not just data centers. So the customer requests 300 megawatts

infrastructure, we build it. Hypothetical example, a year later, they go, I don't need 300 megawatts; I only need 200. Will you drop my contract?

So step one is, yes, we will calculate the excess facilities. In my example, that's a hundred megawatts of capacity that you no longer want. We will take that hundred megawatts and place it into an excess facilities charge that that customer will pay. And excess facilities are charged in perpetuity. That's step one if they want to keep paying for what they asked us to install in perpetuity.

Step two is, I want to drop to 200. I do not want a perpetual charge. So the Company will calculate -- I believe it's the salvage value, book value. We'll look on our amortized value of the installed equipment and let the customer buy the rate base out for that, you know. So they have two options.

Q Thank you, Mr. Blackwell.

And I believe Mr. Jaffe was asking Dr. Laws about the maximum demand and load ramp provision in the ESA -- I'll flip to that -- and whether this was or could be a demand response

program.

Do you have anything you wish to clarify on this provision?

A Yeah. That characterization is the exact opposite -- or what the fact is is the exact opposite of demand response.

This particular section -- there's, I believe, more on the next page -- was put in place in 2022 when we had our transmission constraint issue in Loudoun County. And so we were allocating capacity that customers could have.

You may have asked for a hundred, but the Company did an analysis customer by customer and said I can only give you 20. I'm making a number up. You can only have 20 megawatts.

This provision was put in place to say, you can only have 20. If you exceed it, we will give you a notice. And if you continue to violate or exceed your contracted capacity, we will -- I believe -- the middle paragraph, the last sentence -- we will disconnect you at your expense.

Q I think it may have been the City that asked Mr. Wilson could a demand response program be written into, for instance, this ESA contract.

Do you have a response to that?

A Yes, I do. This is a contract -- the electric service agreement is a contract for electric service. It identifies how we'll serve you, the voltage, your meter is connected, and it has significant references to the Commission-approved terms and conditions and the applicable Commission-approved rate schedule.

Demand response is a voluntary program. And so if a customer wants to participate in demand response, then they would execute a separate contract for that with whoever offers it; PJM, the Company, it doesn't matter.

Placing demand response in here -- because a lot of customers don't elect that option, they are sophisticated, they make their own business decisions, and so it shouldn't -- demand response clause doesn't make a lot of sense to put in electric service agreement. It should be a secondary contract, ancillary add-on, whatever legal term there is. Should be a separate contract because it is a different service.

Q Thank you.

Mr. Blackwell, turning to another topic, it was Dr. Stover who identified best practices --

I believe in cross from Walmart -- in forecasting and said you need to -- I think he used the words marry the past and history, fundamental analysis, and customer intelligence.

Do you use these in your forecasting process?

A Yes, we do. And I'll respond to some comments Mr. Wilson made as well.

We do three things that Dr. Stover identified as best practice. We first look at over 10 years of historical metered data. We have that. We look at that first. And we have to decide is that past 10 years of behavior going to continue into the future. So we have to decide that.

The way we make that decision is from our customer intelligence. My entire team talks to data center customers every single day. We know how many construction letters of authorization they have signed, so we know what we're building.

We also know what those customers have signed for SELOAs. Those are projects they are asking us to study, and it's a pretty good indication of are they going to continue to grow or not. That's customer intelligence.

In addition to that, every year when we prepare our data center contract, I ask our largest data center customers: I've done a forecast for you. Would you give me your forecast and let's sit down and compare them and have a discussion.

So that's customer intelligence.

The last piece is we also use industry reports. In my rebuttal testimony, I was asked to provide the reports that we generally look at, and I provided four links. We read these reports as well as private, confidential reports the Company may have paid consultants to review. We use that to also look at industry trends.

And so we use historic -- over 10 years of historical meter data, customer-provided intelligence, and industry reports.

And if I recall, Witness -- I believe it was Stover -- the Microsoft witness's testimony, those three things were elements of best practice forecasting.

Q Thank you, Mr. Blackwell.

And you mentioned Mr. Wilson, who also gave his idea of what an ideal forecast would be; the Energy and AI report he said was, I think,

closest that had come to what he was looking for. And he mentioned several components of what his ideal forecast would have, including looking at demand for data center services, software and hardware that goes in these data centers, the supply chain, training versus inference AI, broad geographic scope, and range of scenarios.

And does the Company do these items that Mr. Wilson flagged as being part of his ideal forecast?

A We do -- have done and do look at all of those areas. In my opinion, Mr. Wilson mischaracterized several of those.

Q Okay. Would you like to elaborate on what he mischaracterized?

A Yeah, so -- it's a long list but I'll share one.

So Mr. Wilson made a statement about the new AI chips, kind of the name brand for that are NVIDIA chips. And he said they will become more efficient, and therefore, you will see demand in data centers drop over time. That was my summary of what he said.

What he failed to realize is that computer chips are becoming more efficient on a number of

instructions per second or they may measure it in milliseconds. So as chip technology proceeds, it can process more information faster. That is a form of efficiency.

What he failed to realize, however, is that as these new servers and chipsets come out, they require more electrical power to drive them or to power them.

And in my rebuttal testimony, I provided a simple example. We have a -- we've had multiple data center companies in our territory. And if you've ever been in one, they will have racks that are about 6 or 7 feet tall. Everybody has got a different configuration. This one had about 20 traditional servers in this rack. Right next to that rack was another rack and it had two bigger servers and a lot of empty rack space.

So I looked at the data center operator and I said, well, you know, I work for a utility. This is good, you have plenty of more server space, that tells me you've got room to grow.

And that individual's response was, we can't put any more on that rack.

And I said, Why not?

Because the power consumption of those two

new -- brand-new servers was so high, they couldn't put -- the rack could not support it, nor the electrical infrastructure in that facility to drive the rack.

The only way they could have put more servers in -- more new servers in that rack is they would have to jackhammer out the cables in the floor to put bigger cables so they could get more power to the rack.

So while, in my example, NVIDIA chips are more efficient on a instructions per second, the power requirement has gone up significantly. And so as you add new server technology, there's no change to the power consumption. In fact, the limitation is the amount of installed capacity.

Q Thank you, Mr. Blackwell.

I want to turn now to another statement of Mr. Wilson's. Talking about the size of the data center campuses in the Company's service territory versus around the country or even the world, and he said that after reviewing additional discovery the Company had provided after its rebuttal testimony, he was reiterating his assertion that many campuses in the Company's service territory were quite small -- I think he said -- by modern

standards.

Do you agree with that?

A Yes. They are quite small relative to modern -- to what we're building today. Today, our standard campus request is 300 megawatts. That's our standard campus request today. Many of the older data centers are somewhere around 25 megawatts.

What he fails to realize is that when I build a new 300-megawatt data center, brand-new project, I set the meter today -- recall, I talked about the customer gets to choose their voltage, they also get to choose how they want that to be metered. So I'll draw an example.

A data center company builds two brand-new facilities. I set the meter or meters on both of those today.

One customer may say, I would like to take service in transmission voltage 230,000 volts. So they are going to build their own substation. So the Company will set one meter, it will be one account for 230,000-volt service. One meter.

The building right next to it, brand-new -- and one of our largest customers on the system does this, largest data center customer

does this -- they take that 300-megawatt campus and they carve their building up into sections and they request us to meter each section independently.

The reason they do that is they're selling little sections. In an area as big as this courtroom, they want us to put a meter on that. Well, these buildings are humongous, and so you're metering each of those individual sections. So they will sell to Customer A this courtroom. And the meter is set for this courtroom, so they know how to bill that customer.

The courtroom next to this has its own meter. And so when -- the size of the meter to count is irrelevant. That's what the customer asks us to build.

I will also say we do have legacy data centers, we do have smaller data centers. What he fails to understand is -- and I dealt with this last week, we do have a data center, it's an older data center, and the customer said we're closing this down. Why are you closing that down, was my question.

It's not big enough, that's why I'm building this campus right here. I'm taking this

load because I need more capacity, and this building, we just can't do anything with it. I can't put enough NVIDIA servers in there. I don't have enough power.

So the business is not going away, they are closing that small legacy account and moving it to a bigger facility that has a greater capacity. Those are the facts.

Q Thank you.

And turning back -- I know we spoke about a provision in one of the contracts that some thought might be a demand response program, but several respondents -- and Dr. Laws was one of them -- recommended the Company model a sensitivity that incorporates meaningful demand response participation by large loads and then it could be included in a contract with the customer.

And I think Dr. Stover said that demand response could be included as an optimal strategy for all types of resources but he raised some cautions, including EPA limits and declining efficacy.

Do you have anything that you'd wish to add on their comments?

A When you're forecasting any type of load

growth, data centers or anything else, you need to understand how that customer segment or that load behaves. And so I don't agree with those comments because I know today, based on our over 10 years of metered data, how the data center industry behaves.

We are seeing no curtailment by our data center customers --

Q Mr. Blackwell, I'll pause you right there.

Did you on your team create an exhibit to show that you're seeing no curtailment?

A Yes.

Q Okay.

And is this the exhibit that you created?

A Yes. Someone at the Company did, yes.

MS. ALLABAND: Your Honor, I'd like to have this exhibit marked. It is the daily PJM DOM Zone LMP versus Dominion data center load, and it's for the month of January 2025.

BY MS. ALLABAND:

Q Mr. Blackwell, is this what you were trying to explain just now? You --

COMMISSIONER HUDSON: Counsel, did you want this marked and identified? We'll have the bailiff take care of that now.

MS. ALLABAND: Thank you, Your Honor.

THE BAILIFF: The daily PJM DOM Zone LMP versus Dominion data center load January 2025 document will be marked as Exhibit 70.

(Exhibit No. 70 was marked for identification.)

COMMISSIONER HUDSON: Thank you. Please proceed.

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q Mr. Blackwell, was this what you were just speaking to? Is this an example? And can you please explain what is happening on this chart?

A Yes. And just for everybody here -- it may be helpful -- the y-axis or vertical axis is dollars per megawatt-hour, that would be the price in the PJM market.

The x-axis or horizontal axis is obviously time. It's each day for the month of January. The blue bar are the DOM Zone locational marginal pricing, that's hourly pricing, average hourly pricing, for that day of the PJM market.

And so the point first is right around January 22, it looks like. You can see that the price per megawatt-hour averaged around $250 a

megawatt-hour.

You can also see that at the beginning of the month and at the end of the month that's somewhere around 30 to $40; scale doesn't show it. So there has been a wide variety of change in the pricing in the PJM spot market.

If you are a data center customer on a market base rate, and we have roughly 50 percent of our data center load, our customers are on a market base rate, then you're subject to this price volatility.

The orange line is the data center load. Now, we've shown it here indexed, meaning if January was set at a hundred and if another month was higher than that, then it would be at 102. So we just kind of set that. I think that's confusing to explain, so I'm going to make it even simpler than that.

The minimum demand value over this month was 2,796 megawatts for the data center customers. The maximum during this period was 2,946 megawatts. The difference between those two numbers is 158 megawatts. And by the way, that's about the size of one and a half data center buildings that we're building today.

The point being that the demand in this month did not change, yet the price went up substantially, from right around January 18, 19, of just under $50 a megawatt to $250 a megawatt, but the demand didn't change.

The point being, if the industry could do demand response, I don't think there's a demand response program in existence that has a $200 megawatt-hour payment for you to curtail, yet there is no curtailment, and we have seen this as well in past -- you know, in the past with our data center customers.

Now, I don't believe this is -- well, I can't speak for the data centers. One of the problems with looking at demand response for data centers are federal and state emissions rules. A data center is not allowed to voluntarily run diesel backup generation, they are not allowed to run that, and PJM actually has to declare an emergency -- not Dominion, not the utility, but PJM has to declare an emergency. And when that emergency is declared, they are released to run their generators under emergency scenario.

Other than that, they have very limited run time hours to operate their generators, and

they're used -- that's for maintenance purposes. Once a month, my understanding is they crank them up, make sure they work, and turn them off.

And so our laws and regulations at the state and federal level do not allow demand response -- well, do not allow the voluntary running of diesel backup generation. And in our system, that is by far the vast majority of installed generation, it is diesel fuel. The Company doesn't make that decision, our sophisticated data center customers have -- but that's an industry standard, so...

MS. ALLABAND: Your Honor, I'd ask that this exhibit be entered into the record.

COMMISSIONER HUDSON: The document marked and described as Exhibit No. 70 is admitted into the record.

(Exhibit No. 70 was admitted into evidence.)

MS. ALLABAND: Thank you, Your Honor.

BY MS. ALLABAND:

Q And one last area, Mr. Blackwell. I think it was Ms. Jaffe that asked Dr. Stover whether the data centers could or would replace their diesel backup generators with a solar and energy storage

facility.

And do you have a response, based on your experience, whether these customers can, should, or would do so?

A Well, I can't speak for our data center customers. There's nothing preventing our data center customers from doing that today. Nothing prevents them from doing that.

However, I am not aware of a solar and battery -- solar and battery storage install by a data center in our service territory. I'm not aware of one. I've never seen one. And I've been in a lot of data centers, and I believe there's -- there's a couple reasons for that.

A large portion of our data center industry today -- but it's growing outside of there -- is in Loudoun County. Loudoun County property is four to $5 million an acre. So if you ask to build a 300-megawatt data center, solar, a megawatt of solar takes about 10 acres in Virginia. You need about 10 acres to generate a megawatt of solar.

So if you're building a 300-megawatt data center and you want 300 megawatts of battery storage, you need 3,000 acres. I don't think

you're going to put that right in the middle of Loudoun County. First, there isn't 3,000. So that is a practical obstacle to the install of that.

The second thing we find is that we, today, because there's very little green space, when you come to the Company and you say, I'd like a 300-megawatt campus built.

Where's your property?

It's in Loudoun County -- or anywhere.

We say, if it's 300 megawatts, we have to build a substation, extend transmission to the property. We need to build a substation, we need five to seven acres. And the best way to place that is on your property.

That's pretty much the industry build today. And that -- we do that for time and, because getting third parties, if it's off property, is very, very difficult or expensive.

So most data centers say, fine, I'll give you land to put it on my property. That's five to seven acres, and all they want us to do is shrink that footprint.

And so our standard build is air-insulated substation technology; that means you put big

equipment in and you have to space it out so air can circulate to cool it. Think radiator in your car-type thing.

We also have a premium product which the customer pays for because it's over and above normal servers. That's gas-insulated technology. And you can shrink the size of the substation footprint in half. And so you're taking less space.

The point I'm trying to make is data centers want to maximize the size of their buildings so they can put more servers -- compute power -- into those buildings.

So the more you give up to electrical infrastructure, battery, solar, or substations, the less revenue-producing ability you have. So we have a continuous pressure to shrink the size of our substations. And today we're saying, you pay the cost difference between normal service, air-insulated technology, gas-insulated, it's twice the cost, half the footprint, but you're going to pay the premium, the difference.

And we have customers selecting that option today. Their goal is to maximize compute floor space. They want bigger buildings and to

maximize the number of computers in there. We're not seeing interest in putting other things on that property.

MS. ALLABAND: Thank you Mr. Blackwell. Those are all the questions I have for you.

And the witness is available for cross-examination.

COMMISSIONER HUDSON: Thank you. Let's actually break a little bit early for lunch and come back precisely at 12:50 p.m. So we'll stand in recess until 12:50.

MR. WINSTON: 5-0, Your Honor?

COMMISSIONER HUDSON: 12:50, 5-0. We'll stand in recess.

(A luncheon recess was taken.)

COMMISSIONER HUDSON: Appalachian Voices, we're ready for your cross.

CROSS-EXAMINATION (Reb.)

BY MS. JAMES:

Q Good afternoon, Mr. Blackwell.

A Good afternoon.

Q My name is Rachel James, here on behalf of Appalachian Voices.

How are you?

A Doing fine. How are you?

Q I'm well, thank you. I just have a few questions, and I wanted to start with reviewing something you mentioned in your surrebuttal.

I think you were indicating that in the contracts, those three stages of contracting, you mentioned that there is no negotiation; is that right?

A Yes.

Q Okay. And then I believe in the -- let's see. In the SELOA, you mentioned that there's an indication of the service date, which is usually a four to seven-year time range; is that correct?

A That's what we're quoting for new contracts.

Q Okay. And then in that quote that you're providing, so when you set that service date time range, is that a date that the Company sets itself or is that something that it sets through negotiating with the data center or their potential customer?

A I believe I said that in my prior testimony. The Company determines that based on the engineering study. There is no negotiation on that date because you can't -- you don't have infrastructure in place, you can't serve. So it's

when the Company can place that infrastructure into service is what sets that date.

Q Okay. Thank you for clarifying.

And then I believe you also mentioned there's a range of dollar amounts associated with the construction contract, and you estimated between 25,000 -- I'm sorry -- 25 million and 200 million; is that right?

A That's correct.

Q Okay. And what determines that range? Is that based on facility size? Is it based on location? Could you speak a little to the determining factors, please?

A Yes. So I'll draw two extremes, two data center properties. If one has existing 230,000-volt transmission on it, then all you need to do, very simply stated, is cut that line and build a substation right under the line. Substation's somewhere around $25 million. There is no additional transmission infrastructure that you need to build to get to the property.

Q I see.

A That's example one. The other end of the extreme is, let's say you're building a data center property and it's a mile away from existing

230,000-volt transmission and we have to build a new line from existing transmission to that property, and so that will drive a much more expensive build.

Q I see. Thank you.

And then were you in the courtroom yesterday when the counsel for PEC, Mr. Jaffe, was asking Mr. Compton about the Company's contracting capabilities?

A Yes.

Q And did you understand Mr. Jaffe's questions to be aimed at trying to understand whether the Company had the ability, in the process of contracting for electric service, to negotiate the timing of when a new customer receives service?

A I think that's been brought up a couple of times. I don't particularly remember Mr. Jaffe's question.

Q Fair enough. I can -- I will bring up the exhibit that he, I believe, indicated he was referencing from the JLARC report.

Are you familiar with the JLARC report?

A Yes, I am.

Q Okay. So I believe he was referencing the

section and calling out specifically whether the electric utilities have the authority to delay.

Does that sound familiar as an inquiry?

A Yes.

Q And then is the delay of service something that the Company can accomplish through this electric service contracting process that you mentioned?

A So the fact that there's a delay means that the customer wants service faster. So you come to me and you say, I'd like to have 300 megawatts of capacity next year at your request. We do an engineering study and say, it's going to take seven years to provide you service and your 300 megawatts of capacity.

So if that's your definition of delay, it occurs when the customer signs a substation engineering contract. That is the vehicle that we determine when we can establish service, the timing. We put that same date into the construction contract if you want to proceed. So the delay, the way you're asking the question, is based on how quickly can we get infrastructure in the ground to serve you.

Q I see. So it's not a delay -- there's

like a contracted amount and it's not that there's a delay that's beyond that contracted amount; the delay is more in reference to what the customer would prefer and what is actually possible?

A In that context. I also mentioned, the other kind of delay, it's more of a capacity delay. In the context of in eastern Loudoun County, we had a transmission constraint. And in that case, you may have had service or you were right on the edge of getting service and you said, hey, we all agreed for a hundred megawatts or 300 megawatts. And we came back and said, we cannot provide that. For system reliability purposes, we will give you this much.

And I believe I said that prior to lunch on this stand. And so that's another type of delay where, for system reliability purposes, we said, we're only going to give you partial capacity.

Q And is that within what's already been contracted, or does that require some renegotiation of that in-service date and the expected capacity at that date?

A On the second -- second example?

Q Yes, the second example.

A In the second example, we had -- all the customers that were already connected to the system were not affected by that rationing of capacity, whatever term you want. But all the folks that had, if you will, construction contracts and we were building prior to the electric service agreement being executed, we went back and said, it's time to sign this. You asked for 300; however, for reliability purposes, we're going to give you 40, whatever the number was.

So we didn't go back and pull capacity from folks that already had existing electric service agreements.

Q Okay. So would it be fair to characterize that there are three contracts in this process, and it sounds like the experience you just explained happened between contract two and three?

A The construction letter of authorization and the electric service agreement.

Q Okay. So the change of capacity happened between those two contracts; is that correct?

A Yes.

Q Okay. And does the Commission have oversight of any of those contracts when they are issued? Does the Commission review them, or is

that something the Company just executes on its own?

A We have a standard contract. I got to be honest, I don't know the answer to that question.

Q Okay. That's fair.

MS. JAMES: Thank you, Mr. Blackwell.

No further questions, Your Honors.

COMMISSIONER HUDSON: Thank you.

NRDC?

CROSS-EXAMINATION (Reb.)

BY MS. JAFFE:

Q Good afternoon, Mr. Blackwell. I'm Dorothy Jaffe, on behalf of Sierra Club and NRDC. And this may end up being a lot shorter since some of my questions were just asked. So if you can give me one second to kind of go through this real quick, I might be able to take less time, which I'm sure everybody would appreciate at this moment.

So I believe you were talking with Appalachian Voices' counsel about the engineering study and that coming up with a time that you can provide service, and that could be, you know, between four and seven years based on that study for when you can provide service, correct?

A Yes.

Q Okay. And there's a cost associated with that time frame, right?

A I don't quite -- is there a cost for the study? Yes. It's $250,000.

Q I'm sorry. That was probably poorly worded.

The time it takes you, the four to seven years, in order to connect that particular data center customer comes with a cost, correct? Like, I think your testimony was somewhere between, like, you know, 25,000 and up to millions?

A It was 25 million to 200 million after the study, depending on the specifics. I just gave two examples of two different projects at opposite ends of that. We put that in front of you as a customer and say, would you like us to construct? Here is the cost estimate.

Maybe for your project, it's $150 million. If you cancel your project and we spend $150 million, you will reimburse the Company for that investment because you are -- you caused us to put it in place but you're not taking advantage of it.

Q Okay. And so if cost were no option or if

the data center were willing to pick up those costs, could you do it faster?

A No.

Q Okay. So it seems to me that, based on your engineering study, you come up with how much it's going to cost to connect the customer, how long it's going to take, so when their -- what their in-service date is, so your duty to serve or your obligation to serve does have conditions attached to it, correct? You are providing the time by which you can provide service; it is not immediate?

A I'm not -- I don't know what the legal definition of "conditions" is. What I'm talking about is we can provide you service at this time, here's the cost obligation, and here's what you've asked us to build. So if that's your definition of conditions, that's what we put in that contract.

Q Okay, that's fair. And were you here earlier when Mr. Bocanegra testified that the model is capable, including some sort of a delay in the forecast?

A Yes.

Q Okay. So wouldn't you agree with me that

it would then be reasonable, for purposes of the IRP, to run a sensitivity that included that delay in the forecast?

A Well, the delay is already in the forecast. So once a year in the PJM process, we're required to submit a long-term forecast. So once a year, we look at the time it takes to build infrastructure. And, in fact, last fall we lengthened that. We publicly told the industry that we were turning around engineering studies in, just say, six months. And due to the sheer volume, we lengthened that.

And also based on the amount of infrastructure and the size of requests we're getting, it is lengthened the construction project. Because I may not -- when you're providing large, 300 megawatts of power, you have to look at what is it going to take from existing transmission to get to your project. Just say it's one mile. That's in that $200 million.

We also have to look at is there a -- do we have enough capacity on our backbone transmission system, 500,000-volt system? And if -- I don't do this for a living in the PowerFlow modeling -- it requires investments

there, then we factor that into the timing of the service.

So it's very quite likely I can give you service much quicker than I have to go back and do a backbone project in order to bring higher levels of capacity in.

So did I answer your question?

Q Not exactly. And maybe it was just poor wording on my part.

But I guess what I was getting at is running a sensitivity that would include a delay in service for some of these data center companies maybe until the Commission can determine whether or not there's a reliability issue and whether or not the VCEA's targets can be met.

A Well, I believe the Company is responsible to determine whether there's a reliability issue, but that's a nonlegal opinion. So I believe the Commission is expecting us to identify those, but I can be corrected on that.

And I'll also say we forecast once a year. And so if we see it's going to take longer to put infrastructure in place to serve customers, which we have, we adjust the long-term data center forecast. I'm speaking about the data center

forecast.

So what my team gives to PJM for their review and adjustment already includes -- every year we do that assessment and factor in known delays, what's changed from the prior year, which we did. And that then goes through the PJM process, as Witness Bocanegra -- as he described, and then PJM gives it back.

So that delay sensitivity you're referring to is already in the data center forecast.

Q What about a delay sensitivity due to cost implications of meeting that load?

A I don't understand that question.

Q So if you know that it's going to cost X billions of dollars in order to meet that load by 2030, would you do a sensitivity that could push out meeting that load by five years and see what the cost implications are?

A Well, you've got that backwards. We don't do a cost estimate to give -- to deliver service by 2030. We do a cost estimate to say when can we -- using our standard construction practices, when can we deliver that. And it may be 2032.

We do not do a cost estimate to say what will it take to advance that two years. I've had

that question about negotiating energization times, and we don't do that. We are required to build infrastructure on standard practices. And our timelines are determined that way.

Q Right, I understand that. I guess I was looking at it more from a residential bill impact analysis.

COMMISSIONER BAGOT: Can I ask a clarifying question, because I think the word "delay" might be being used differently.

Are you essentially asking, for my understanding, whether for purposes of the IRP, when we're looking at a forecast based on contracts, which would already include the delay, I think, that Mr. Blackwell is talking about with the in-service date, that even though the contracts may say X amount of demand is going to be metered or online in 2035, let's run a sensitivity where we bump all of that back by five years to see what that would do to the model?

Is that what you're asking, whether they did that sort of sensitivity?

MS. JAFFE: Correct. And what the implications to the residential impact analysis would be.

THE WITNESS: Yeah, I am responsible to prepare data center forecast. We do prepare scenario analysis, but I have not prepared a forecast with that particular thing in mind. Witness Compton would have to answer that. I guess he's done for the day, but that's in his area.

BY MS. JAFFE:

Q That is true, he was excused. I'm sure he's happy for that.

Well, then, turning to your rebuttal, on multiple pages, 4, 6, 7, and 8, you've stated that -- and you said this in surrebuttal also -- that you gained a lot of insight through customer intelligence and your working relationships with data centers.

Did I understand that correctly?

A Yes.

Q And how many data centers does the Company serve?

A We serve -- it's, I think today, 52 discrete companies today. And those are companies that have a meter or multiple meters, but it hovers between 50 -- they buy one another all the time, so it's roughly 50 discrete companies with

multiple -- some of them have multiple facilities or accounts.

Q Right.

And as part of your conversations with them, maybe with Microsoft, Google, Amazon, who happen to all be parties to this docket, have any of them ever told you that they have their own renewable energy targets?

A The vast majority of them have renewable targets and they share that with us.

Q And so since they have shared that information with you, have they ever asked Dominion to provide them with renewable energy so that they can meet their own personal sustainability goals?

A Yes.

Q And what was Dominion's response?

A We have partnered with, if possible, and some of those require new tariffs. And so if we think that's prudent business, we file those programs or tariffs with the Commission, subject to their approval, and that has occurred in the past.

Q So is the Company, I guess, interested in continuing to work with those data center

customers on progressing those goals even further?

A I believe before lunch we had a discussion about partnership. I answered that, but the answer is yes.

Q Okay. And since you brought that up -- and I believe this was discussed during your surrebuttal, and this was marked as Exhibit 60, an archived printout from Dominion's website.

And that last sentence regarding:

Dominion Energy is not just electric utility, we are a true partner in growing your data center footprint.

Do you see that?

A I do.

Q Okay. So in your surrebuttal, you had stated that it's important for Dominion to be a partner and to not be adversarial and that you want to make their experience with the Company pleasurable, but that's different, right, than helping them expand their footprint.

So my question to you is, is the Company in the business of expanding the data center's actual footprint?

A The Company -- our business is to provide electric service. So if, in your example, that

data center company wants to expand, our job is to provide service.

We have other customers that have no expansion plans. They build one facility and they're done. So our job in that case is to partner with them to support the business; may not have an expansion.

MS. JAFFE: Okay. Thank you. No further questions.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: Thank you, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. REISINGER:

Q Good afternoon, Mr. Blackwell. Just a couple more questions for you following up on this web page screenshot, which is marked as Exhibit 60.

Is this web page still online? Do you know?

A I don't know the answer to that. I believe if you look at the link at the top, this was back in 2021. We've had a couple iterations. I don't believe this is the latest, but I don't

know for sure.

Q Okay. I'm going to ask you about a document that I put on the screen here. This is comments filed by the Piedmont Environmental Council in Case No. PUR-2023-00206, which were filed with the Commission on April -- I mean May 21st of 2024.

And I want to ask you about a statement that appears on the third page of those comments. And these comments quote Dominion's website and states that:

Dominion maintains a data center economic development web page touting Northern Virginia as, quote, the ideal choice to support the continued growth of cloud and technology-focused companies.

PEC continues to state that:

Dominion invites potential data center customers to begin the contracting process by getting a rate quote, quoting Dominion's website as saying: We're not just your power supplier; we're your partner. Let's start the conversation.

And these comments cite Dominion Energy's economic development's web page for key industries, specifically data centers.

Do you see that?

A (No audible response.)

Q Do you recognize this language from Dominion's website?

A Not word for word but I'm familiar we have comments like that up there.

Q Okay. Is the Company actively marketing to attract new data center customers?

A The Company is actively marketing for a variety of industries.

Q Okay. So the Company is soliciting new data centers to move into its Northern Virginia service territory?

A I would say it different. In most cases in a utility, they reach out via the Virginia Economic Development Partnership, VEDP, who, in turn, contacts us or, in the case of data centers, in most cases they reach out directly to us.

Q Okay.

A But regardless of what segment it is, our job is to provide service, and we try to make that as easy as possible for new customers. It's good for economic development for the Commonwealth.

Q Okay. And, Mr. Blackwell, in your surrebuttal testimony before lunch, I heard you say that you -- you don't believe that SCC

oversights of the contracting process is required at this time; is that right?

A I don't believe that was the question I was asked.

Q Okay. Do you believe that Commission oversight of Dominion's contracting process is appropriate?

A I'll defer to the Commission on that. It works today, so I...

Q And you also said a couple times in your surrebuttal, according to my notes, that the Company is a regulated monopoly, so these customers have to deal with you when they move into your service territory; is that right?

A For wire service, that's correct.

Q So the Company is a regulated monopoly but it is also a business, correct?

A A regulated business, yes.

Q The Company's business is selling electricity, correct?

A The Company's business is to provide electricity to our customers.

Q When the Company sells more electricity, the Company makes more money.

Would you agree with that?

A That's true for most businesses.

Q The Company has a financial incentive to sell more energy and add more assets to its rate base.

Would you agree with that statement?

A If that's what is required to serve those customers, then yes.

Q Mr. Blackwell, when you are working through the interconnection process with a data center, are you and your team thinking about how that new customer might affect Virginia's progress towards its energy and environmental policy goals?

A That's not -- the answer to that is no. We're obligated to provide service. And so that's our job, and we work on providing the service that's requested.

Q Okay. Has any Dominion executive ever come to you and said, hey, maybe we should delay interconnecting a potential hyperscale user based on concerns that it might impede the Company's progress towards energy or environmental policy goals?

A No.

Q Okay. You don't view that as being your job or the Company's job, to ask those types of

questions?

A Ask that question again.

Q I'll strike that last question, Mr. Blackwell. It's not very well phrased.

MR. REISINGER: But that's all I had for you.

THE WITNESS: Thank you.

MR. REISINGER: Thank you.

CROSS-EXAMINATION (Reb.)

BY MR. MURPHEY:

Q Good afternoon, Mr. Blackwell. Cody Murphey, with the Data Center Coalition. I just have one question.

And do you recall discussing with Ms. Allaband the negotiability or non-negotiability of the three contracts?

A Yes.

Q And specifically, I think it was with the CLOA, the construction LOA, that the -- I believe you said the Company chooses the infrastructure required to serve the data centers.

Is that a fair --

A If I said that, let me offer clarification.

Q Yes, please.

A We have standard equipment configurations that we build for all of our customers. And so depending on what -- the type of service and amount of the capacity the customer asks, we select, based on our standard and approved normal service construction standards, we say, this is what we're going to build to serve you.

So the -- choosing the way you asked the question is based on our normal configurations that we install for all customers.

Q And that's -- you almost got to my second question, but so it's fair to say that the Company is required to select that infrastructure to most reliably meet these customers, correct?

A I think there's a little more to it. Generically, yes, but we also, in our standards, have to do it economically.

Q And that's the same for all customers, regardless of the class type, within its service territory?

A It is industry or customer class independent.

MR. MURPHEY: Thank you. That's all the questions I had.

CROSS-EXAMINATION (Reb.)

BY MS. GRUNDMANN:

Q Good afternoon, Mr. Blackwell. Carrie Grundmann, on behalf of Walmart.

So I want to make sure -- I want to go back through, because I have a couple of questions for you. And I'm going to ask you about some math, and if we need to do it subject to check, I'm fine with that.

But am I right that in your testimony, your rebuttal testimony at page 15, you mention -- is it a hypothetical 60-megawatt data center in Northern Virginia?

A Could you put that up on the screen?

Q I can. Give me just a second.

You've got this generally data center cost approximately 600 to $1,100 per gross square foot, so 700,000-square foot 60-megawatt data center would cost approximately 420 to $770 million to construct.

That's just a generic example, isn't it?

A Actually, if you look at the end of that, there is a footnote reference, No. 9, and that came out of that reference.

Q So you -- okay. So you're depending on the accuracy of -- you're depending on the

accuracy of this article here that you cited?

A I'm not depending on anything. I don't build data centers, and so the best way to make that point is to find a third-party source that has knowledge of that.

Q Okay. And do you know if those costs are just purely the cost of construction or if they also include the cost of the servers and the chips that go inside the data center?

A I read that article a week or so ago. I can't remember. I believe it was -- I believe an all-in cost, servers and everything.

Q Okay.

A Subject to check.

Q Okay. I think we could be doing a little bit of subject to checking. That's okay.

Did I also hear you say that most of the requests you're getting these days are 300 megawatts --

A Yes.

Q -- in that sort of size range?

A Yes.

Q Okay. Which is five times larger than the 60-megawatt example that's in your testimony?

A That's correct.

Q And then -- and I'm going to put it back up, just so that everybody's seeing -- I recall and wrote down that you mentioned a number of 595 million.

Doing the quick math, the midpoint between 420 and 770 is 595.

Do you agree with that?

A Correct, yes.

Q Okay. And so bear with me here. I tried to do just a little bit of math, which, if you were here the other day, I did not do well. So that's why I say we should do these subject to check.

But for purposes of the SELOA, the substation engineering letters of authorization, did I understand you to say that the cost for that study, sort of regardless of size of data center, is $250,000?

A That is our standard amount we request.

Q Okay. And so if a customer doesn't move forward beyond the SELOA stage, they are going to pay you $250,000?

A No. What actually happens is we request that deposit up front.

Q Okay.

A And let's say I complete your study --
Q Uh-huh.
A -- and based on our engineering time, we only spent 200,000.
Q Okay.
A But we record time spent, assign cost to that job, and in that example we would refund you $50,000 because we only spent $200,000.
Q Okay. So you don't make excess profit off of it, but 250,000 is sort of the baseline number that you collect, and hypothetically, I think, in looking at the SELOA, there's a potential that it may even be higher than that number?
A Correct.
Q Okay. And then am I right that the entity for whom you're performing this analysis has to have site control?
Is that what I heard you say?
A Yeah. We look for that, yeah. We look for site control.
Q And does site control mean ownership or a lease or some other contractual right to develop the property?
A We see a little bit of all of that. We see options to buy as well --

Q Okay.

A -- on that property.

Q And so I just kind of want to -- I'm going to put up an example.

And so this is my math using the $250,000 payment and the $595 million. My quick math shows, if a data center were to cancel after that, that it's .42 percent of the overall project.

Do you accept that math, subject to check?

A Maybe the calculation is correct, but I don't understand what you're asking me. You're mixing apples and oranges in that scenario.

Q Oh, I understand. I'm just trying to understand, if we were trying to contextualize how much money a data center may be giving up if they elect to not move forward beyond the SELOA stage, I'm trying to identify that 250,000 that they would pay the Company and then not move forward on that project relative to the overall cost of the project that they would spend.

A The cost for the engineering study, the deposit required is 250,000. So if you're factoring that over 595 million, assuming this math is correct, it's .42 percent.

Q Okay. And then I think you said -- and I

apologize for my typographical error -- but that the range of potential costs for -- at the SELOA stage is somewhere in the range of 25 million to 200 million; is that correct?

A Yes.

Q Okay. And so in the low end, can you accept my math that 25 million out of a total project cost of 595 million is 4.2 percent, and 200 million out of 595 million is 28.78 percent?

A Well, I'm not going to get my calculator out, but I'll assume you calculated it correctly.

Q Okay. And so you probably agree with me, right, that if someone is spending nearly 30 percent of their overall project cost, so if the construction costs are close to 30 percent of the total project costs, that probably increases the likelihood that they are going to move forward with a project.

Do you agree with that?

A Yeah. I've said, I did say earlier that, once they sign a construction letter of authorization, it's a pretty good indication they are serious about that project.

Q And do you think that that's true under the $25 million example where it's only

4.2 percent of the total cost they are going to spend to build that data center?

A That's up to the Company. If 25 million is pocket change for them, that's their decision, not mine. I personally think $25 million is a lot of money.

Q So I promise you, sir, if I had 25 million, we might not be talking today, right?

So then I've put together a second example based on the 300-megawatt example you just gave me, and what I've done, I'll represent -- because I'm just trying to really contextualize the concept that you put forward in response to the surrebuttal comments with your counsel, that once you get to that SELOA stage, customers have put in a substantial amount of money and they are not likely to abandon the project.

So I'm going to represent to you what I've done for this demonstrative is that 300 megawatts is five times the size of the 60-megawatt example you gave me before. And I grossed up the 595 times 4 instead of times 5, assuming that there would be some economies of scale as you get larger. Okay? And I'm not representing I know these numbers to be true and accurate, but I'm

just attempting to contextualize them.

So can you accept, subject to check, that at the SELOA stage with a 300-megawatt data center with total cost of 2.38 billion, that abandoning a project would represent the .011 percent, subject to check?

A Well, you've said a lot of words, but I don't accept one of the first sentences you said. What you said was, I believe, once they sign an SELOA, they have a lot of money invested. They have $250,000 invested at the point of a engineering LOA.

Q But would you agree with me that the engineering -- does the 25 million to 200,000 include the 250,000 from the SELOA or do they sit on top of it?

A It sits on -- it's part of that. It's in that bucket. If you -- we talked about canceling, you choose not to sign a construction letter of authorization. If you do sign a construction letter of authorization, the cost of that engineering goes into the job.

Q Okay.

A So it would be in that 25 million to 200 million estimate.

Q Well, in all fairness, the reason I've included the SELOA was in the event that that 250,000 sat on top, I didn't want to leave it out of the calculation. But then as we move down to that -- again, that 25 to $200 million range, assuming a 300-megawatt data center cost 2.38 billion, do you see that the range here on the low end, if the construction costs are 25 million, that that represents 1.05 percent of the total cost, subject to check?

A I do, but your -- the Company is not spending 2.3 -- $2.38 billion. That's not our money.

Q I understand. But your testimony before this Commission is that when a data center signs a construction letter of authorization, that's a lot of money for them to invest and they are not likely to walk away from the project, correct?

A That's correct.

Q And so what I'm attempting to provide to this Commission, since I do not see it anywhere in your testimony, is a comparison of the costs that they are going to spend versus how big of a portion of the total project they intend to invest so that the Commission can determine whether it

agrees with you that those customers are investing a substantial amount of money at the SELOA stage and they are not likely to walk away from the project.

Does that help to understand the context for my questions?

A Yes.

Q Okay. So then you see that if they pay the full 200 million, that it's something like 8.40 percent of a total of $2.38 billion project?

A Assuming your math is correct.

Q Please, let's make that subject to check.

And so I think you said you've been to a lot of data centers, you've been involved in a lot of the contracting process.

Most of these data centers include some level of contingency in their construction projects, right?

A I'm not -- I don't build data centers for a living, so I can't answer that question.

Q And so you -- you don't know what would be a typical contingency amount to include in a project?

A That a data center put -- in their own internal build, I have no idea.

Q Okay.

A I don't know why they'd share that with me.

Q Okay. And then I do have a couple of questions. Turning to what I believe was marked as Exhibit 11, which was a copy of -- attached to that discovery response as the ESA. And I do just -- I want to go through and just ask a couple of questions.

Here, on the first page of this contract, I notice that the initial period, is there a standard number of years or is that subject to negotiation?

A We actually derive that. We derive that, so we look at the -- we look at the amount of money invested to serve this customer for distribution assets and divide that by the contract dollar minimum amount, and that yields the number of months, if you will, it will take to recover, based on a minimum payment, the invested assets. So it's a derived -- not a negotiated contract.

Q When you say it's derived from the cost, is that the 25 million to 200 million in cost that you and I were just discussing are incurred during

the CLOA stage?

A No. I said the cost installed of distribution assets.

Q Okay. So those are separate and apart from the 25 to 200 million?

A No. They're in that 25 to 200 million.

Q So it's a percentage of that 25 to 200 million?

A No. It's what was installed.

Q So it's the actual number in the range of the 25 to 200 million?

A Yeah. That 25 to 200 -- remember, we talked about a substation, distribution circuits, and transmission infrastructure. Remember those three pieces.

Q Correct.

A The contract dollar minimum is for the distribution assets.

Q And on average, what percentage of the total costs does that distribution represent of what is spent by the Company in construction?

A I don't know. I don't look at the average cost that way. For a big data center build, we're going to put in a substation, so 25 million bucks. That's -- that would be the minimum, because we'd

also have to put in distribution circuits and different pieces of equipment.

Q But hypothetically, if you had to spend $200 million right now, the Company's contracts are setting an initial period, not based on the total investment of the utility to bring that customer, but a portion of it?

A It's based on the installed distribution assets.

Q Give me just a second, I want to make sure that I don't have any other questions on this contract.

Are the majority of the rest of the terms of this service based upon sort of the applicable rate schedule GS-3 or GS-4?

A You'd have to put the contract up and point out what particular section you're asking about.

Q I'm not asking about a particular section; I'm asking you more broadly if many of the terms that the customer is subject to are the typical terms and conditions for service for the rate class GS-3 or GS-4?

A I believe, if you look at the end of that document, which you won't put back up, it

references applicable tariff -- a Commission-approved tariff and the five Commission-approved terms and conditions.

MS. ALLABAND: Ms. Grundmann, I think he might be talking about page 8, by the numbers at the bottom.

MS. GRUNDMANN: Are we talking about Condition No. 7?

MS. ALLABAND: You would have to ask him, but I believe that's the page he was talking about, if he's asking about which of these conditions.

MS. GRUNDMANN: Okay. Thank you, sir. Those are all the questions that I have.

CROSS-EXAMINATION (Reb.)

BY MS. ROBB:

Q Good afternoon, Mr. Blackwell. I don't know if you know the answer to this or not. We're talking --

A I'm sorry. Could you move the microphone. I can't hear you.

Q Cliona Robb, on behalf of Microsoft. Good afternoon.

You were just talking with Walmart counsel about that 250 -- 25 million to 250 million cost?

A It was 25 million to 200 million, I believe. I'd have to go check, but yes.

Q Okay. And you -- in working with data centers and getting them into the -- the final stages to sign an ESA, are you aware that they work with lenders to raise some of that money?

A With lenders?

Q Yes.

A Yes.

Q Okay. And do you understand that the lenders want a certain amount of certainty before they will go ahead and provide that amount of funding?

A Yes, I'm aware of that.

MS. ROBB: All right. No further questions.

COMMISSIONER HUDSON: City?

CROSS-EXAMINATION (Reb.)

BY MR. WINSTON:

Q Good afternoon, Mr. Blackwell.

A Good afternoon.

Q I just want to focus on one comment that you made during your surrebuttal regarding the inclusion of demand-side management options inside -- I don't know that you specified a

specific one of these agreements, but you said that it doesn't make sense to include them or provisions related to them in these agreements because it's a different service.

Does that accurately represent what you said?

A Yes, roughly.

Q And when you say that it's a different service, could you elaborate a little bit on what you meant by that?

A So the electric service agreement is -- highlights how the Company, per the Commission-approved rules, will provide you service. That's what the intent and purpose of that document is. That's why in the previous questions we reference in there, they were blue-underlined, the Commission-approved terms and conditions and Commission -- appropriate Commission-approved tariff.

Q Now, within the construction agreements and the electric service agreements that the Company signs with, in your case, in your area of expertise, data centers, are there construction standards that your data center customers are held to or are they just allowed to build their sites

however they want?

A They, I believe, follow national electric codes. But our line of demarcation is the meter. So we don't dictate or operate, have authority from the Commission to operate behind the meter, so I can't speak to what drives their construction practices.

Q Are you familiar with any of the DSM programs that are potentially available to data centers?

A Very broadly, yes.

Q Okay. I have on the screen page 3 of 6 of Schedule 3 from Mr. Hubbard's testimony -- not in these proceedings but in the last DSM proceedings, which I believe, subject to check, is Case No. PUR-2023-00217.

And it describes the Nonresidential New Construction Program, which is part of the Company's DSM Phase XII filing.

Do you see that?

A Yes.

Q And these projects for, let's say, all of the data center customers that the Company deals with are opt-out programs in that data centers in general, under the Virginia Clean Economy Act, are

allowed to opt out of those riders and those programs; is that correct?

A I believe Witness Hubbard is coming up and you'd be better to ask him. I don't know the answer to that.

Q To your knowledge, in general, are data centers participating in these programs?

A I am aware that some data centers participate in some of these programs.

Q And are you aware that pursuant to the hearing -- to the order -- sorry -- pursuant to the filing that the Company filed in the DSM proceeding 2023-00217, that the energy savings from those opt-out customers, even though those energy savings were through no effort of the Company's, were also included in the Company's energy savings targets?

Are you aware of that?

A I'm not familiar with that case.

Q Well, subject to check, do you not think it's reasonable -- not from a legal perspective. I'm not asking whether or not the law allows it.

But I'm asking, if the Company's position were to incentivize and to promote data center adoption of these types of demand-side options, do

you think it wouldn't be reasonable to include it as a term of service in an agreement with those parties?

A I have been very clear what my responsibilities are at the Company. I think you should ask that of Witness Hubbard.

MR. WINSTON: Nothing further, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. FARMER:

Q Good afternoon, Mr. Blackwell. John Farmer, with Consumer Counsel.

A Good afternoon.

Q I just have a couple of questions. Most of mine I think you've already addressed.

But about the CLOA contract, the construction contract -- I'm sort of starting from this highlighted sentence in your testimony that:

Once customers reach the CLOA stage, the financial requirements to build a data center indicate future real load.

That's your testimony.

A Could you move the microphone a little closer? It's very hard to hear.

Q Your testimony here is that:

Once customers reach the CLOA stage, the

financial requirements to build a data center indicate future real load.

That's your testimony, correct?

A Correct.

Q Okay. And during your surrebuttal comments, you were talking about the costs that must be reimbursed to the Company by the data center if they leave the project during the CLOA stage; is that correct?

A Yeah. I use the term "cancel the project."

Q Cancel the project.

And the range was 25 million to $200 million, correct?

A Those were taken a little out of context. The 25 to 200 million is the range of what we would build for a standard data center piece.

And so -- what was the first part of that?

Q I guess I was just trying to confirm your surrebuttal comments is that the costs that might have to be reimbursed to the Company through a construction contract would be in the range of 25 million to $200 million?

A Correct, if the Company, in fact, spent the money and put the iron in the ground and then

you don't show up for service, yes.

Q Thank you.

And that was going to be my next question, actually. Is those costs that would meet that range of 25 to $200 million, would you agree with me that those would primarily be iron-in-the-ground costs?

A I have said that's -- if we put that iron in the ground, yes.

Q Okay. So I want to -- and then one other thing you said in surrebuttal, you said that construction may not begin or will not begin until a couple of years after execution of the CLOA.

Was that your testimony?

A Correct.

Q Okay. And when you say "couple of years," can you put, like, a number on that?

A Well, if we have to build transmission, we have to file a CPCN with the Commission, so we -- they determine the schedule, as I understand it, and then you have a hearing, and so that all -- you know, we don't control that.

Commission is busy, so they are in control of their calendar. And so it's very hard to put a particular -- to answer that question because I

don't control the Commission's schedule.

And we also don't control local permitting, and when you're building big infrastructure, you do require permits. And so every project is different.

If you recall in my prior -- I said, I believe this morning and this afternoon, on average, we quote four to seven years. If you're in a rural area and they really want data centers -- and the electric politicians are pro data centers -- you're going to have four-year construction, very quick construction, and your CPCN case may be the -- may be the gatekeeper or the equipment you have to order. So it's hard to get an average because it's very site-specific.

Q Okay. And I just want to show you -- this is Exhibit 10, which is the CLOA. And in Subsection A there, do you see that, engineering, procurement, and installation includes the following?

A Yeah. Can you slide it down. I don't know which contract we're talking about. I can't see the title. The other way, thank you.

And which exhibit is it?

Q Exhibit 10. I'll show you the

interrogatory.

A Construction letter, thank you. I just couldn't -- didn't know which one it was.

Q And there, under Subsection A, engineering, procurement, and installation includes the following.

Do you see that?

A Yes, I do.

Q Okay. And so you have surveying, obtaining rights-of-way, purchasing real estate, obtaining permits and certificates, legal work, all other purchases and activities required to plan for and obtain suitable rights to construct, own, and maintain.

Are those some of the things that would be taking place during those couple of years between execution of the contract and construction?

A Yeah. In fact, many of these occur before construction can start.

Q Right. Okay.

And moving down to No. 2 there, engineering, consulting, testing, procurement of materials and equipment, those would -- those would be occurring before construction begins as well, correct?

A Yeah. It's hard to construct something if you don't have the equipment. I'm not making light of it, but yes.

Q And then the next item's installation, so that's where the iron-in-the-ground construction is starting, correct?

A Correct. But if we start ordering equipment and you cancel, we've spent money.

Q Sure. Sure.

MR. FARMER: Thank you, Mr. Blackwell. That's all the questions we have.

THE WITNESS: Thank you.

CROSS-EXAMINATION (Reb.)

BY MR. ZIELINSKI:

Q Hi, Mr. Blackwell. I'm Mike Zielinski, for Staff. Most of the questions I have, have already been asked and answered, so this should be pretty quick.

Let's start with -- this is page 10 of your testimony. You see Figure 5 here shows 7,570 megawatts of SELOAs under contract.

Can you tell us approximately how many individual projects could be represented in that number?

A How many?

Q How many projects, individual projects, that number could represent?

A I don't -- I don't remember. That chart, I believe, if I read line 3, was in July of '24, and we have a lot of projects, so I don't know the answer to that.

Q Okay. That's fine.

And a little lower here you state:

To date, no data center customer has canceled a project after signing a CLOA, so these contracts represent a clear commitment from data center customers and support the data center load forecast.

We talked about that. That's still true? That's still your testimony, after they sign a CLOA, that's still a good indication of their firm commitment to follow through with the contract process?

A What is your question?

Q I'm sorry. I just wanted to establish that, after a customer gets through the CLOA stage, you can reasonably say that that's a firm commitment to follow through to the end of the process?

A I believe it's a firm commitment. If

you're on the hook for 25 million to $200 million, to me, that's a firm commitment. But I may not make as much money as you, so maybe it's not for you.

Q I guarantee you make a lot -- okay. Anyway, moving on.

So we'll talk about the SELOAs again.

Do you know what the attrition rate for projects that ask for an SELOA are? In other words, what percentage of the projects that are asking for an SELOA actually go on to then sign a CLOA?

A No. I believe we were asked that in discovery or -- I don't know the legal term, and so I had some comments in my rebuttal testimony about that.

So we don't know that yet. In my rebuttal testimony, I was asked -- or we had a request, do I think that would be valuable. I do.

And in my rebuttal testimony, we just put a system in to track all of these contracts for that very reason, because you want to get an idea how that moves through the system.

So a little history. The first time we produced this contracts chart was July of 2023.

It was all manual to produce that. We produced it again in July of 2024, and then produced it at the end in December of 2024.

We were putting a system in, it's now in place, and so we are tracking that to see if we can put together what those conversion factors are.

I will say, over the last three years, we have signed roughly a gigawatt of electric service agreements each year for the last three years. So if you follow the logic, that means roughly a gigawatt of construction letters of authorization have moved -- or converted to electric service agreements.

And I believe, if you look over time, the megawatts in the construction letter of authorization bucket hasn't materially changed. So that suggests a gigawatt of projects have moved from the substation engineering letter of authorization to construction.

So that's the best metrics I have today to share with you the conversions.

I also said in my rebuttal testimony, we have a very large amount of projects in the substation engineering letter of authorization

bucket. And there was a question to one of the Staff witnesses yesterday about what would happen if all that -- all of that, you know, got turned into ESAs.

And in my testimony, I was very clear, I don't believe all of that is going to turn into an electric service agreement. Those are folks, everybody in this room, that wants to be a data center developer, and if they paid $250,000, we will study that project. But when I hand them a contract that obligates them to 25 to $200 million, these -- some of these developers, a large part of them, are going to disappear.

And so the largest part of our bucket of potential projects are in the engineering study phase for folks to make a go, no-go decision.

They will not all go to construction. In fact, if you would put the chart up, I'll make a very simple point, if you would, please -- the graph.

So it's kind of small for me, but I believe the 2038 number -- what is that following the red line, what's that amount? If -- I can't -- what's that number --

Q The last number on --

A -- the very last number that's going up and down.

Q I think -- is that 12,927?

A So that's 13 gigawatts. That is our demand forecast in the year 2038.

Q Okay.

A So just to put the numbers we're throwing around in perspective.

Q So switching gears now, on pages 18 and 19 of your rebuttal -- I'm not going to bother putting it up -- but you're responding to Appalachian Voices Witness Jim Wilson and you're discussing AI.

Just out of curiosity, are you aware of how much of the data center customer base is attributed to AI specifically?

A No. Well, let me give you a little color on that. Am I allowed to do that?

Q Yes, please.

A So artificial intelligence is a technology and it kind of has two -- there's two parts to it.

The first part is called "training," and that's where -- let's just say you work for a company and you want to know -- I'm making this up -- what behaviors drive someone to buy a truck.

So you put variables in that you think are relevant into an AI training model and you run that facility to train a model and it figures out those things.

Once -- and the training -- in our conversations with the big titans that are driving AI technology, they are telling us that an AI training data center will behave very differently; it will have significant fluctuating demand, you do not need a strong fiber network because it's kind of isolated, and you can schedule it and run it at your leisure, you can turn it off. Perhaps in the future it would be a great opportunity if you had a lot of AI training for demand response. Perfect example. So that's one mode, AI training.

But once that model is trained, you then put it in what's called "inference mode," or very simply said, you put it into operation. And when you put that model in operation, it runs like normal data center load, 24/7, steady load.

Virginia is the largest market in the world by a long shot. We have some of the best fiber network in the world. Why would you build -- if you remember the numbers we were throwing around to put a data center in the world,

you're not going to do a substantial amount of testing in Northern Virginia or a very established market because why are you going to put a billion dollars in the ground and use it not consistently?

What you're going to do is take those models that are trained, put them in inference mode, and you're going to put them in the major markets where the population centers are so you have the fastest response.

So I'm very familiar with AI in that sense. And what we at the Company are looking for is, are we going to get any AI testing in Virginia? Because if we don't, our data center load is not going to change.

And, in fact, we've been -- you've been reading in the press for, what, two years, about artificial intelligence, I'm guessing. Roughly two years, let's just say. We've had no change in our load factor, no behavioral change in our industry. So it looks like Virginia is going to be an inference market, is what it appears to us.

The consequences of that are perhaps some of these new markets you're reading about may become testing hubs. Because when it all boils down to it, nobody likes an hourglass on their

computer.

And so you put applications into major markets with the faster fiber speed so you never get the hourglass on your computer. So it seems a pretty good conclusion that we're going to be a major -- the world's biggest inference market.

Q Okay. And sorry, you might have said this; I was trying to absorb all that information. But basically, when it's in -- the AI is in training mode, the energy consumption can go up and down?

A Correct.

Q And then once it's in inference mode, it's steady?

A Correct.

Q So if it's in training mode and it's going like this, once it hits inference mode, do you know is it going to be up here or is it going to be down here or somewhere in the middle?

A Trying to make sure I understand your question.

So we don't know yet. So if you have an existing data center today, and let's say it's 24/7, running at 100 megawatts continuously, just say that's what it's doing. If tomorrow they come

in and say half of this data center is going to run training, run in training mode, then we would see the energy consumption drop. Because the half that's doing AI training would be cycling up and down, and so the energy use would be fluctuating. And the training side of the data center would have less electrical consumption as opposed to the inference side, in my simple example.

We are not seeing any change in the energy consumption or load factor in our entire industry, so it doesn't appear that we have any training, or if there is, it's immaterial to the industry that we have, leading us currently to believe we are going to be an inference market, which makes sense because we're the largest market in the world by a long shot.

Q Okay. I think I might have asked that question poorly. What I was trying to get at is, as you were saying, there's a pretty big difference between the AI is in training mode and then it's steady when it's in inference mode. And I was just trying to figure out, do you know, when it hits inference mode, is it at the higher end of that range that it was in when it was in training mode or is that the lower end?

A I think the question you're asking, with all due respect, it doesn't work that way.

Q Okay. Fair enough.

A So you train the model. Once you're done, you package it up, take it and put it in, say, another data center, if that's how they will do it, and you run that. It's now trained and you're running that, and so that -- once you put it in inference mode, it will look like normal data center load.

Q Okay. Thank you.

A I'm sorry if I didn't answer that.

Q That's fair. Were you in the courtroom, I think it was Tuesday, when we were discussing with Dr. Vance the issue that the Company has seen with data centers dropping off the system?

A Yes.

Q Have you had any conversations with data center customers about that specific issue?

A No. But I was asked to -- that's a very technical issue, and so I was asked to arrange meetings with some of our data center customers to deal with that. I'm more on the commercial side, not the engineering side, and so the folks I deal with are also folks that deal on the commercial

side.

So that conversation was, industry titan, we want to talk about this issue. Can you find your appropriate engineer to talk to our engineers, who I believe rolled up under Ms. Vance's area of responsibility.

Q Okay. So without getting too much into the engineering side -- this is Exhibit 15, this was that incident review. I think you spoke earlier in your surrebuttal that data centers, their backup generation is diesel; is that correct?

A What I said was the vast majority of backup generation in our service territory today is diesel, diesel-fired.

Q Okay. You see this highlighted text says that, during the disturbance, they switch to their backup systems.

See here -- end of the document, this -- whoops, zoom out.

While this disturbance did not cause significant operating issues with the grid at this location and at this time, as data center loads continue to grow rapidly, the risk could quickly increase.

So again, without getting into the engineering technical side of it, do you think it's fair to say that the more -- the more disturbances we get, the more data centers are going to have to switch to their backup, a large majority of which is diesel, so the more these incidents happen, the more diesel is going to be run?

A Here's my response to that. So what Ms. Vance and her team were doing was working with our customers. A lot of this issue has to do with how the customers' equipment on their side of the meter and the utilities equipment on our side of the meter, how they -- are they in coordination? That's the best I can do for engineering.

And so if they are out of coordination, depending on how their settings are set, it may trigger them. We did have data centers in that event that did not go to backup generation. So their settings were less conservative, and so I think the effort is -- it's not a foregone conclusion, was the way I heard you ask the question.

We're working with our data center customers to look at -- and Ms. Vance is much more

qualified to talk about that -- to see if, let's get our settings in sync. And that's the nonengineering answer.

Q Okay. Do you think the Company could request, as part of an ESA, information on the lockout characteristics of a future data center's equipment or the power distribution architecture that the data center uses?

A What do you mean by that?

Q I guess this is maybe more of a technical issue that Dr. Vance would be better suited for, but it's basically -- my question is, if you can get -- if you're going to be asking more technical information of future data center customers, are you also going to go back and get that same information from current data center customers?

A You'll have to direct that to Witness Vance.

MR. ZIELINSKI: Okay. No further questions. Thank you, sir.

THE WITNESS: Thank you.

COMMISSIONER HUDSON: Dominion?

MS. ALLABAND: Just briefly, Your Honor.

REDIRECT EXAMINATION (Reb.)

BY MS. ALLABAND:

Q Mr. Blackwell, do you recall the conversation that you had with Mr. Zielinski, from Staff, about the CLOA and the firm commitment that the CLOA represents by customers?

A Yes.

Q And as part of the firm commitment, in addition to the cost you quoted, the 25 million to 200 million, that the CLOA also obligates the customer to sign an ESA?

A Yes. There are two obligations, which was in my rebuttal testimony, that a CLOA does. It creates a cost obligation for the customer and requires the customer -- if they don't cancel, it requires them to sign an electric service agreement amount for the capacity that they asked the customer [sic] to install.

So very simply stated, if you ask us and sign a contract for us to build 300 megawatts of capacity, you're required to sign an electric service agreement for 300 megawatts of capacity as opposed to 10. So very simple.

MS. ALLABAND: Thank you, Mr. Blackwell. That's all the questions that I have for you.

COMMISSIONER HUDSON: Thank you, Mr. Blackwell. You're now excused.

THE WITNESS: Thank you.

MS. ROBB: Your Honor, if I may request the Commission's indulgence, I'll need to leave here at 3:00, so I've asked my colleague Mike Quinan to sit in for me, if that's permissible?

COMMISSIONER HUDSON: Absolutely.

MS. ROBB: Thank you.

MR. DANTONIO: And the Company calls Mr. Flowers to the stand.

COMMISSIONER HUDSON: Mr. Flowers, let me just remind you, you're still under oath.

MR. FLOWERS: Yes, absolutely.

CHAIRMAN TOWELL: Maybe we can all learn from Mr. Flowers.

TODD FLOWERS, recalled as a rebuttal witness, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MR. DANTONIO:

Q Are you the same Todd Flowers that offered testimony on direct?

A Yes, I am.

Q Do you have with you a document entitled Rebuttal Testimony of Todd Flowers, consisting of a one-page summary, 15 typed pages of questions

and answers, and one rebuttal schedule, which was filed in a public version only in this proceeding on March 25th, 2025?

A Yes, I do.

Q Was that document prepared by you or under your supervision?

A Yes, it was.

Q Do you have any corrections or additions to that document?

A No, I do not.

Q If you were asked the same questions appearing there, would you provide the same or substantially the same answers?

A Yes.

Q Do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes, I do.

MR. DANTONIO: I'd ask that the rebuttal testimony of Todd Flowers in public version only be marked for identification and admitted into the record.

THE BAILIFF: The rebuttal testimony of Todd Flowers will be marked as Exhibit 71.

(Exhibit No. 71 was marked for identification.)

COMMISSIONER HUDSON: The rebuttal testimony marked and described as Exhibit No. 71 is admitted into the record.

(Exhibit No. 71 was admitted into evidence.)

BY MR. DANTONIO:

Q All right. Mr. Flowers, you've been in the hearing room these past few days, correct?

A Correct.

Q All right. Respondents and Staff have commented that the Company did not include traditional large-scale nuclear as a selectable supply-side resource but did include small modular reactors, or SMRs.

Do you recall some of that testimony?

A Yes, I do.

Q Can you please expand on the Company's decision to include SMRs, but not traditional large-scale nuclear, as a selectable supply-side resource?

A Yeah, absolutely. I think I'll just start with, you know, the Company's not opposed to continuing to consider the evaluation of traditional nuclear, assuming that the inputs such as the cost, the siting, the construction

timelines are available and viable.

I'll also note that for a lot of utilities, SMRs seem to be the priority and focus for a myriad of reasons. I'm going to step through just a couple of those.

Certainly, there have been cost overruns with traditional nuclear. I think we're all familiar with the Vogtle Units 3 and 4, the most recent two units that came online; in fact, the only two units that have come online in the last 30 years. Those projects were very far behind, seven years. I think the original cost estimate was 14 billion, but they came in at over 30 billion.

The nuclear industry has historically always been challenged with building large nuclear on time and on budget. And the entire premise of deploying small modular reactors is to speak to that challenge and to solve for why these large infrastructure projects have not been able to deliver under the cost and schedule scenarios that have been contemplated.

And there's other examples, too. There's a Hinkley Point C facility in Europe. It's using a European pressurized reactor. It too is

following a similar pathway that the Vogtle units did.

The difference there is that those will be the fifth and sixth EPR units, so you'd think that they would have gotten to what we call nth-of-a-kind. That's not happened. These units already use about 30 percent more steel, 25 percent more concrete. So with the traditional nuclear, we've been really challenged with standardization in getting to that nth-of-a-kind. And it's for, you know, a lot of those reasons that SMRs were considered.

There are a couple projects I listed in an exhibit that I'll touch on, and then I'll speak a little bit about some of the benefits of SMRs and how we can get to nth-of-a-kind and standardization. The X-energy project that's listed in that exhibit, even since I filed that exhibit two weeks ago, both X-energy and Dow Chemical have submitted their construction permit application to the Nuclear Regulatory Commission. That happened on March 31st.

The projects that I listed in that exhibit are moving forward and on schedule. And in the 27 years I've been involved in the industry, it's

very rare to get a review by the Nuclear Regulatory Commission on time. TerraPower has done exactly that. They submitted their construction permit application, and their draft safety evaluation report for their CPA was received ahead of schedule, which is pretty unprecedented in that federal regulatory licensing process. So these smaller designs are achieving reviews and meeting their milestones that I think are not what we have seen with traditional-scale deployment.

SMRs have many advantages, and I'll step through many of those. And I'm certainly happy to sit down with Staff and others, really anyone in the courtroom, I love this stuff, I'll spend my weekend chatting with you. But they are factory-fabricated, so a lot of the modules that are used to construct these are -- can be fabricated in a factory. And when you do that, there are a few really significant advantages to this factory fabrication and delivering those modules and then putting them together.

Any time you do any kind of assembly-line fabrication, you get really good quality and precision. You also dramatically reduce cost.

And then, third, you deliver those components much more quickly.

So with the SMR deployments, if you can get to that factory fabrication and deliver these modules to a site, you can really deploy these at scale with cost and construction certainty, you know, the item that I mentioned that's kind of plagued the nuclear industry for many decades.

Even if you look at our own North Anna and Surry units, they are both what we call three-loop Westinghouse pressurized water reactors, constructed fairly recently or close together when they were constructed and placed in service. But these are large units. And even the two we call sister units are very different, and it's because of the scale and the size of these facilities.

They are kind of constructed piecemeal on-site, very different than a standardized module that is, you know, fabricated off-site and brought to a site and built. So being able to get to that nth-of-a-kind is where the industry really sees being able to reduce the costs associated with SMRs.

There's also a dramatically smaller footprint. The reactor core is about a third the

size of a traditional nuclear core. And if you take a site -- I'll use North Anna as an example, which I'm very familiar with our North Anna power station and that footprint. If you look at the North Anna site, you may be able to place one traditional nuclear unit at that site, but because SMRs are smaller and the footprint is smaller and you optimize that site, you can actually deliver more megawatts installed through the deployment of SMRs than you could with a single large-scale nuclear.

But not only that, you can deploy that capital incrementally, so you are deploying capital incrementally and you can actually produce, potentially, more megawatts than you would if you followed the path of deploying one really large unit that's going to take a lot longer to construct.

Some of the advanced designs also use substantially less water than your traditional light-water nuclear reactor. If you drive by our North Anna or our Surry plants, we built an entire lake to cool North Anna. Surry is on the James River. There are very few sites in the Commonwealth of Virginia where you say, what,

there's a big body of water that I can draw upon to build a centralized light-water reactor? Those sites don't exist.

With SMRs, the footprint is substantially smaller. And with some of the advanced designs that don't use light water to cool the reactor, they use other mediums to slow the neutrons down and cool the reactor, like a high-temperature gas or molten salt, you can use just a municipal supply of water and that's all you need. So the siting flexibility with SMRs are greatly advantageous.

Also the site -- the emergency planning zone for a traditional nuclear plant is 10 miles. So our North Anna and Surry plants operate under that regime. Maintaining that 10-mile emergency planning zone certainly comes at a higher operations and maintenance cost, much more harder to permit.

With small modular reactors, with the core being smaller and with the thermal hydraulics of the system, the NRC has blessed off what we call a site boundary emergency planning zone. So you don't need to worry about this 10-mile EPZ; it's all right there on the site.

There's no postulated scenario by which you would ever have an off-site release where you need to manage that 10-mile zone under, not a high probability; very, very low probability event, but that event, that scenario is not even contemplated. It's not physically possible. So the NRC has blessed off this concept of a site boundary emergency planning zone.

There's also other equipment that's not needed with SMRs. They are cooled through natural circulation or natural convection. They use gravity-fed systems. So there's no need for emergency diesel generators. If you lose off-site power, it's okay. You don't need to start up these diesel generators.

There's no operator actions that are needed. So were there an event, the operators could walk away -- what we call walk away safe. They have these inherent safety systems that really take the safety of operating these facilities to the next level.

Then I'll just end with just a tremendous policy support. At the federal level, this past summer, they passed the ADVANCE Act. And not many laws were getting passed in Washington, DC, last

summer. That was a presidential election year.

But one piece of legislation that did was the ADVANCE Act and had tremendous bipartisan support. 48 of our 50 senators voted for it. I don't think I've ever seen legislation at the federal level with that much support make it through, especially at a time when very little is happening in Washington, DC.

At the state level, we have the governor's energy plan got released in 2022. Its moon shot goal was to have an SMR within the decade, and that was released in '22.

And most recently, we have Senate Bill 454, patroned by Senator Morrison out of Northern Virginia, also strong bipartisan support. That legislation was enacted last year. And you may be aware, but the Company did make a filing to utilize the benefits of the legislation that were passed at the state level.

Q Great. Thank you, Mr. Flowers.

So the Utah Association of Municipal Power Systems, or UAMPS, their SMR project was canceled. That cancellation was discussed yesterday, I believe, with Staff attorneys.

Do you have any thoughts on that project

cancellation?

A I do. And I followed that project pretty closely, and certainly, it's the disappointment for the industry to see a project get canceled. But that project is very unique and different.

UAMPS is not an investor-owned utility. It had a model by which the model was subscribed -- the participants in UAMPS subscribe to the offtake of that.

It was in an environment with rising interest rates, with rising inflation, cost of steel and concrete had gone up, so the project became uneconomic for UAMPS. So they canceled the project that would have utilized a NuScale SMR.

I'll note that NuScale continues to develop their design. And all of the licensing that NuScale went through with the USNRC is really valuable. So the second facilities that go through that licensing process will be benefited by what NuScale did.

For example, the site boundary EPZ, that methodology was undergone by NuScale.

But I want to highlight that a single project that gets canceled does not, in my mind, set precedence for the ability for new nuclear,

and specifically SMRs, to play a big part in our transition to clean and reliable energy.

Interestingly, that project was canceled, I believe, in November of 2023. And just two months later, UC, Berkeley published a report, I believe in January of 2024, where they had done some research on utility-scale wind and solar. And in that report, they released that 30 percent of utility-scale wind and solar projects in the United States have been canceled.

So that period of time -- I think that was over a five-year window leading up to January 2024.

And I bring that up just anecdotally because a lot of projects get canceled, and just because a single nuclear project was canceled does not mean that it's systemic to small modular reactors.

I think cancellations occur across all parts of the energy sector. And even beyond the energy sector, there are other types of projects, infrastructure projects that do get canceled.

As unfortunate as that was, I do not think that the cancellation of the UAMPS project is indicative of the ability to deploy SMRs

successfully.

Q Great. Thank you.

And there was also discussion yesterday about why the Company chose to model SMRs as a selectable supply-side resource but did not include LDES, or long-duration energy storage, as a selectable supply-side resource.

And during that discussion were cited the number of SMR designs and the fact that there's new designs and fuel types with SMRs, and that inferred that LDES is in a similar position as SMRs.

How would you respond to that?

A Again, I think I touched on this on Tuesday. It's not an apples-to-apples comparison. SMRs, again, are just derivatives of existing technology.

If you break up a nuclear power plant or an SMR at the system that delivers energy to the grid into kind of two systems, there's the nuclear island and then there's the balance of plant.

And that balance of plant is where you have a -- you have steam that turns a turbine connected to a generator, spins, creates electrons, delivers air to the grid, follows the

same ranking cycle that every steam cycle plant does in the country, very well-known, provides tremendous value to the grid. As Dr. Vance can allude to, this thing called spinning reserves. That grid interface is very well-known on the balance of plant side.

What's different between nuclear and, say, a gas-powered station or a coal station is how you get that heat to create the steam. And there are different options on the nuclear island and different technologies.

But even though there are multiple designs, there are many prototypes that have been in operation for many, many decades. There are sodium-cooled reactors. There are gas-cooled reactors that have been in operation all the way back to the 1960s. Heavily understood. I would say more understood than a lot of technologies that are in operation today.

So even the advanced designs, like the TerraPower high-temperature gas design or the -- I'm sorry -- the TerraPower sodium-cooled reactor or the X-energy high-temperature gas design, fundamentally, the thermal dynamics and the fuel and how that fission process takes place is very

well understood.

I recognize that there are new fuel designs that are being deployed. By design, the -- I think the HALEU fuel was mentioned as, hey, this is new. Is there a supply chain for HALEU? And HALEU is that high-assay low-enriched fuel. Globally, it's available today but from countries that are adversaries to the United States, so the US is working to develop a domestic supply of HALEU.

Just last week, the DOE did announce that it is delivering its first allocation of HALEU to five US-advanced reactors. So there are steps taking place at the federal level to develop that supply chain.

The TRISO fuel was also mentioned. That's the TRi-structural ISOtropic nuclear fuel. It's the kind of fuel that X-energy is using. It looks like a cue ball when you play pool.

There's a facility that is under construction. They have the X-energy fuel facility at Oak Ridge. That facility is going well. They are already doing site preparation work.

So things are happening in the market to

ensure that these new fuel designs are going to be deployed. And I'll mention that these fuel designs allow for longer operating cycles, increased deficiency, higher energy density.

So the industry is looking at these fuel designs, not to make it unnecessarily complicated, but to deliver better value to these advanced SMRs that we're looking to deploy.

Mr. Martin can speak to long-duration energy storage, but these use new chemistries with new round-trip efficiencies that interface with the grid system in new ways.

And I argue that, with a traditional steam cycle plant, it's connecting to the grid the same way as a lot of our power stations with iteratives of a technology we all understand. It's a different ballpark.

Q Okay. Thank you.

So there's been testimony from several respondents on the Company's 1,020-megawatt annual build limit for solar resources, mostly stating that that build limit is too restrictive and, instead, should be relaxed.

And there is some testimony, specifically from Staff Witness Smith, that discussed build

limits and how, you know, we're looking to get them within a "range of reasonableness" was the phrase that was used.

Do you recall some of that testimony?

A I do.

Q Okay. And can you provide additional explanation on the Company's solar build limit that was used in the 2024 IRP and just hit some of the higher points there?

A Sure. I mean, it's a very complex model, and the whole purpose -- I don't like calling it a build limit. It's really a modeling boundary condition because we are not setting a market limit on how much we will develop or acquire. It's really a modeling assumption to establish a boundary of what we think can realistically be deployed based on the market conditions and permitting and things like that.

But you establish those boundary conditions so that the model will optimize with results that are realistic.

And just given a lot of things that I discussed in my testimony, the local permitting is challenging, interconnection is challenging. Luckily, we see the light at the end of the tunnel

with PJM reform. I don't know that local permitting is getting any easier.

I think that the build limits that the Company assumes are challenging. We've never deployed that many megawatts in a single year, and I think it's just becoming more and more difficult to build these large solar facilities.

Q You said you've never built that many megawatts in a given year.

So would you have a comment on whether that build limit has been a real-world constraint ever?

A It has never been a real-world constraint. We've done over a decade of RFPs to the market. We no longer have a, hey, we're looking for 400 megawatts. We set no cap. We are building these projects as quickly as we can.

We're working with localities every day of the week. We are in close contact with the developers. And we evaluate and reevaluate these build limits on an annual basis. They've changed year over year.

So if local permitting eases up, we'll certainly consider new build limits next year, but we have never come anywhere close to building the

number of megawatts that are in this boundary condition in the model.

Q Okay. And continuing with that reasonable range discussion -- and some of the, you know, restraints that you spoke of were with respect to siting and permitting facilities?

A Correct.

Q Do you have any specific examples of challenges the Company has experienced in Virginia with respect to building new solar resources?

MS. GRUNDMANN: Your Honor, again, sort of the same issue that I had in response to the last witness. The Company has two opportunities to file testimony. All of the detail that it has provided in support of SMRs it could have provided in its direct or in its rebuttal testimony.

We spent five minutes listening to a discussion of fuel for SMRs in response to a surrebuttal question about why long-duration energy storage wasn't included in the selectable resources.

The witness didn't answer that. I've let it go. But at this point, the Company has had every opportunity because it knew, in response to the parties' testimony, that build limits were an

issue. And this is essentially everything that could have been in rebuttal testimony, so I would just ask that the witness be directed to confine themselves to actual surrebuttal issues as opposed to trying to supplement what should have been addressed and was before them based upon prefiled intervener and Staff testimony in the Company's rebuttal.

COMMISSIONER HUDSON: Counsel?

MR. DANTONIO: Yeah, if I can respond. So first off, I only have two more questions for Mr. Flowers, and he can keep his answers pretty constrained, as counsel suggests.

I would add, though, that some of the testimony we heard just yesterday from Staff about a range of reasonableness and developing build limits and concerns about the Company's not providing enough explanation as to how these build limits were developed, that's what Mr. Flowers is responding to. He's responding to some additional examples of why these build limits are within that range of reasonableness, that phrase that was brought up yesterday.

MS. GRUNDMANN: And, Your Honor, that's precisely my issue. Staff is pointing out and

pointed out, because that was in its testimony, that there was a lack of explanation. The Company's opportunity to have explained it was in its rebuttal testimony, and it did not do that.

And so, again, I don't think that this is appropriate surrebuttal, and I continue to have an objection, as I did to the Company's former witness.

COMMISSIONER HUDSON: Counsel, you have a couple more questions. Let's make sure it's constrained to specifically rebutting on surrebuttal.

MR. DANTONIO: Absolutely. Thank you.

BY MR. DANTONIO:

Q So do you need me to restate that or --

A No. And I'll be really brief. I know it's late on a Friday.

But you don't have to look very far to understand the permitting constraints in the Commonwealth --

THE COURT REPORTER: Slow down. Slow down.

THE WITNESS: Sorry. I was trying to be quicker.

But you can look at "Cardinal News" or

"Virginia Mercury," and any day of the week there's another locality that has made their permitting requirements more strict.

There was a board of supervisor meeting last night in Fluvanna County. On Monday, the Mecklenburg Board of Supervisors unanimously voted to discontinue utility-scale solar as an allowable use in that locality. That's not just happening in Mecklenburg -- and they're saying no more utility-scale solar; it's not allowed.

Greensville County, Bedford, Henry, Pittsylvania, Halifax, Rockingham, Augusta, Gloucester, Clark. It is becoming more and more difficult to get projects permitted.

And I bring that up because it speaks directly to the boundary condition in the model. These projects are not getting approved by localities. And if you can't get a conditional use permit to build it, it's not going to come online.

So to have an unrealistic boundary condition in our model does the IRP process no good. The results that you would get would be unrealistic and I think detrimental, because you may overly rely on a resource that is never going

to come to fruition.

Q Thank you for bringing some of those recent actions that have come up after you filed your rebuttal testimony.

So just one more question here, Mr. Flowers.

With the siting concerns -- and this is a very specific question that was brought up by Mr. Laws, if you witnessed Laws' -- I think it was on Wednesday -- regarding his used assumption that only eight acres of land per one megawatt of solar is -- that's a reasonable ratio of land to solar.

Does that align with your experience in actually building solar resources in Virginia?

A I would say that aligns with my experience when I was developing and acquiring projects in the deserts of California or in Utah, where you can have a perfect triangle with no areas of avoidance.

That is not the case in Virginia, where you have these wetland fingers that kind of spread out throughout the state, where you have tributaries that feed into the Chesapeake Bay, which we greatly respect and have significant setbacks from, where you have other setbacks

established by localities.

Every site is different and unique, but eight acres per megawatt is, I think, on the low end. We have projects where we're using 20 acres per megawatt given the site conditions, the topography, and the need to avoid wetland.

MR. DANTONIO: Great. Thank you very much.

This witness is available for cross-examination.

COMMISSIONER HUDSON: Thank you.

MS. CLANCY: No questions.

COMMISSIONER HUDSON: NRDC?

CROSS-EXAMINATION (Reb.)

BY MS. HORAN:

Q Good afternoon, Mr. Flowers.

A Good afternoon.

Q My name is Claire Horan. I represent Sierra Club and NRDC. You gave sort of a definition of build limit a minute ago, but I wanted to check whether my understanding sort of matches that.

Is an annual build limit an estimate of the solar capacity that can become operational in that year?

A Yes.

Q Thank you. Okay.

And all my questions are going to be about the solar build limits.

A Okay.

Q So looking at page 2 of your testimony, you say that the local land use permitting is the most critical factor contributing to the annual solar build limits; is that right?

A Yes, it's the most challenging.

Q And I take that to mean that that's the most limiting factor, the most -- the controlling factor that contributes to the build limit; is that right?

A Not exactly. I mean, it is what is limiting the total megawatts that can be deployed in localities and across the Commonwealth.

Q And it's more of a factor than the PJM interconnection queue issue?

A I think they are both factors. The PJM queue process is also constrained. I mean, if you submit a new project today into that queue process, you're not going to have an approved interconnection agreement until about 2028.

So that process is also, I think,

moderating the number of projects that can connect to the grid. But it's probably secondary to local permitting.

Q Okay. And you say that the local land use permitting constraint, that's supported by data from the Weldon Cooper Center, right?

A I'm sorry. Can you repeat that?

Q You use data from the Weldon Cooper Center solar database in your testimony --

A I did, yes. Yep.

Q -- and that's the only support you offer for your statement that annual solar build limits are -- besides the Company's own experience.

A Yeah, the Company's vast experience. I mean, we're the third-largest owner of the solar fleet of all utilities in the United States, but we have boots on the ground every day across the Commonwealth.

And I use that Weldon Cooper Center data just anecdotal because they've done a nice job of putting that database together.

Q Oh, okay. So you didn't use that database to decide -- to help you determine the build limit?

A No, absolutely not. I only use that data

as demonstrative information and my rebuttal because I thought it shows a good picture of the challenges in the Commonwealth.

Q Okay. Thanks. Turning to page 5 of your testimony.

So where I've highlighted, you've said that data from that database indicates a statewide continuous decline in the number of solar projects approved by localities. And then you go on to say:

This trend is also evident in the total capacity of approved projects measured in megawatts.

Did I read that correctly?

A That's correct.

Q And by "this trend" in the second sentence, I understand that to mean that you're saying there's also a statewide continuous decline in the total approved capacity for solar projects; is that right?

A Yeah. And what I mean is the -- if you add up the total megawatts in the state, the total megawatts that's being approved year over year is declining.

Q Okay. And you use two figures in your

testimony that both come from the Weldon Cooper Center solar database, so I wanted to turn to those.

A Okay.

Q And this is in black and white, but it's the one that you --

A I have the color version.

Q I thought you might.

And so -- you know, for others, that top line, the darkest one is approved. And then the line right below that is the denied line, if that helps others who are looking at the black and white.

Is that right?

A That's correct.

Q Thank you. And this figure is of the number of projects approved.

Now, number of projects approved doesn't tell you how much solar capacity has been approved in a given year, right?

A That's correct.

Q And the number of projects approved doesn't tell you how much solar capacity could be built in a given year, right?

A No. It's just anecdotal of projects

making their way through the permitting process.

Q Sure. So in other words, you can't tell from this graph whether more solar capacity was approved in, say, 2021 or 2024?

A Correct.

Q Okay. So even if -- and I'll use this one in color.

MS. HORAN: Thank you, Mr. Johns.

BY MS. HORAN:

Q So even if the number of projects approved sort of gives us some helpful information that relates to the build limit on solar capacity, this chart just shows -- or this graph just shows a dip in 2024, right?

A Correct.

Q It's not really showing a continuous decline, because there's only been three months so far in 2025; is that right?

A Correct.

Q Okay. So if we scaled up for the rest of 2025 to happen, then it looks like it's at about 10 for projects that have been approved and, you know, that may go up to 40 if you take into account the rest of the year and assume it's roughly even; is that right?

A I don't know that I would draw that conclusion, based on what has recently happened in the Commonwealth across some localities.

Q Okay. So we just don't really know, maybe, what's going to happen in 2025, but we --

A No, if you want -- if you want total megawatts, that second figure, Figure 2, is probably a better representative picture.

Q Sure, we'll get there.

A Okay.

Q Well, so, you know, at best here we have that there was a dip in 2024 and we're not sure about 2025, but you wouldn't say that a one-year decrease is a continuous decline, would you?

A It declined in 2022 as well. And my intent was just to be illustrative of the challenges in the Commonwealth, not to -- this, by no means, establishes our boundary conditions for the anticipated capacity we think that can realistically be brought online.

Q Okay. Fair enough. Thank you.

Okay. Moving on to Figure 2, which does show the solar capacity that's approved in a given year?

This graph also includes 2025 and has the

same issue of, you know, the rest of the year hasn't happened, right?

A Correct, it's through March 31st. There were two other figures I used and they updated the graph while I was drafting the rebuttal testimony.

Q And even though, you know, we don't know whether the rest of 2025 will be even with the first three months, but if we did scale that up, I believe it would be higher in 2025 than in 2024; would you agree with that?

A If you mathematically scaled it up with no basis by which future projects are going to get approved, that math is right.

Q Sure. Okay. So that also doesn't show a continuous decline -- I mean, if the number in 2025 ends up being higher than 2024, then we have a cluster of capacity between 1,500 and 2,000 megawatts and sort of an outlier in 2022; would you -- would you agree with that?

A Yeah, in looking at this data, if I look in 2022 -- and that's when things started becoming challenging in localities. So if you look from 2022 and you look at, well, '23 has gone down, '24 has gone down, to me it shows a trend.

Q Okay. And part of how you're interpreting

that is, you know, based on some other information that isn't visible on the graph?

A Yeah. I mean, I've been developing solar projects for over a decade and I think things really started becoming challenging in localities around 2022.

Q All right. Now looking at page 5 of your testimony, you mention that current constraints may be mitigated over time.

Do you see where your testimony says that?

A I do.

Q And which constraints are you referring to?

A Things like the PJM interconnection process. I think that process -- they're going to a new cluster process, which is very different than traditional first-come, first-serve process. So I think that new process will mitigate some of these constraints, certainly some of the supply chain constraints can be mitigated as, you know, things like manufacturing brought to the US. There could be constraints with labor that are mitigated through programs like SHINE where they are working to develop programs to train solar installers.

So things like supply chain, interconnection, and certainly also local permitting. I mean, we're working with localities very closely to make sure they understand the benefits of these projects to their communities. It's a heavy lift, but we're working to ensure that when they establish these new ordinances that it's a thought-out process that doesn't limit opportunities that we can bring to these communities to build these carbon-free facilities.

So over time, maybe there will be a change in position and receptivity will turn the other way. We have not seen that yet, but we're working really diligently with communities to try to deliver more of these projects across the Commonwealth.

Q And do you expect -- you know, when you say "over time," do you expect that to be within the 15-year planning period that some of these constraints will be mitigated or resolved?

A I didn't have a planning horizon in mind. It was really just a statement that speaks to the fact that we review these limits every year, these constraints change month by month, day by day, year over year, and we will modify these boundary

conditions and the model based on information we have at the time we're putting those limits together.

Q Well, couldn't you account for the uncertainty in the mitigation of some of these constraints by having the build limit be different for different years during the planning period?

A I think when you do that, you're adding certainly some scenarios that may or may not be real. You can certainly lift the build limits and say you're going to build 2 gigawatts of solar a year as a sensitivity. I don't know that that would add any value. I think it could be detrimental, because you may be over relying on a resource that will never see the light of day.

Q Well, just as an example of what I meant, looking at 2023, if you look at the table, it looks like in 2023 you had different build limits for different years.

And so, you know, I was wondering, why not do that this year, in this IRP?

A Yeah, we just -- I can't point to anything directly that says, Hey, in 2038 we think that it would be easier, and 2023 it -- you know, it's somewhat qualitative in how these get established.

But we did not set that increase in the solar levels we see that could potentially be built just because I don't know that the levers in future years would really allow for that.

Q Okay. Does the Company evaluate whether previous build limits were appropriate, such as the limits in Table 1?

A We do kind of look at a view of historically where have -- you know, what have things been built and are they touching that limit. Yes, so I have looked at -- in establishing a limit, one of the things I looked at is total company-owned and PPAs that we brought online in a given year, and we're still well below that boundary condition in the model.

Q Well, in doing that evaluation, do you distinguish between how much capacity you did bring online in a given year and how much you could have brought online?

A As I mentioned, we're bringing all that we can online. We're not turning projects away in the RFP process. If a project is conforming and we think it's in the customers' best interests, we're moving forward with the projects. We are not limiting the number of projects that we're

introducing to the Commission based on a modeled boundary condition.

Just recently our fifth clean energy filing, we brought all the projects we thought were in our customers' best interests, and they all got approved last Monday, which is a really good thing. But we're working really diligently to bring as many projects forward as we can. And when we're working with developers and internally developing our own projects, we're not looking at this modeling boundary condition. We're trying to build everything we can to meet the VCEA targets.

Q And then I was wondering, does the 65/35 percent split in solar acquisition between company-owned versus PPAs factor, in any way, into the build limits?

A No.

Q I want to look just for a minute at the Exhibit 53, the Best Practices Guide, I think people have been calling it; just ask you about one of the challenges that it discusses.

A Okay.

Q So in the first highlighted section, and this is Best Practice 14, it says:

Utilities must carefully balance between

letting optimization models optimize and imposing constraints to reflect real-world construction and interconnection bottlenecks.

Do you agree that's one of the challenges the Company has in determining appropriate build limits?

A Yeah. I mean, there's certainly bottlenecks I speak to in my testimony with interconnection and supply chain and things like that, and those are part of the considerations.

Q And then on the other side of that is letting the model optimize and having flexibility in the model?

A I mean, you can put a boundary condition that's not realistic and the model may pick other resources and may pick resources that may not realistically be built.

Q Okay. And then the second sentence in the highlighted portion, I think is the guide giving a recommendation for how to deal with that challenge that we just talked about. It says:

The best way to address this tension is to model scenarios with and without supply constraints and varying constraints over time to reflect realistic expectations about factors that

will impact future resource availability.

This is what I understand that to mean. Would you say that that means modeling scenarios with and without particular supply constraints would, at least according to the recommendation, help balance the need to account for real-world constraints and to gain more information about the optimal resource mix?

A I take that to read that you -- you know, you should model constraints over time to reflect realistic expectations, and what you realistically expect would be available. That's what it reads to me: Vary constraints over time to reflect realistic expectations of all factors.

Q In focusing on the language of modeling scenarios with and without supply constraints, would an example of that, as applied to the annual solar build limits, be including scenarios that disaggregate different constraints from each other so that, for example, the PJM interconnection issues were a separate sensitivity from some of the constraints dealing with local land use permitting?

A I think -- I mean, certainly PJM interconnection availability is a constraint, but

even if you have a queue position and approved agreement to connect to the grid and you don't have a local land use permit, you're not going to get a project brought online. So as I mentioned earlier, I think the local land use permit is probably the overlying constraint.

Q Okay. And you say "probably." But if you ran the modeling --

A I'm not a modeler; I'm a developer. So I provide my input to our modeling team on what I believe based on experience and developing and delivering projects. I don't -- I don't talk a whole lot about a modeling scenario because that's not the role that I have.

Q Okay. You would agree that there could be -- that additional information could help with planning if it were determined --

A I think it could help and it can be detrimental. As I mentioned earlier, if you have an unrealistic boundary condition in a model, from a long-term planning perspective, can be detrimental to long-term planning because you may rely on a resource that realistically is not going to be available. And I think that's not a good thing for long-term planning.

Q Well, as long as you ran both, you would have both sets of information, right?

MR. DANTONIO: Objection. This is asked and answered.

MS. HORAN: No further questions.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: No questions, Your Honor.

COMMISSIONER HUDSON: DCC?

MR. MURPHEY: No questions, Your Honor.

COMMISSIONER HUDSON: Walmart?

MS. GRUNDMANN: I just have just a couple.

CROSS-EXAMINATION (Reb.)

BY MS. GRUNDMANN:

Q Mr. Flowers, in response to some surrebuttal with your counsel, you had quite the discussion of what I would describe as the benefits of SMRs.

Do you remember that discussion?

A Yes. It was half an hour ago.

Q Do you -- do you know of any party to this proceeding who has argued that SMRs should not have been available to the model to select?

A No. But in this state, I think it would

be really difficult to deploy both SMRs and traditional-scale nuclear. There are only a few sites where you have early ideal interconnection or an ideal site. Our North Anna nuclear power station is one of those.

So I don't -- I don't know that it would be a good position for any utility to pursue both large-scale nuclear and SMRs in parallel.

Q Well, in the interest of time, if you'll just do me a favor and try to answer the question I've asked so that we can kind of move through this fairly quickly.

Did I suggest to you that the Company should be parallel -- on a parallel tract seeking to deploy both traditional-scale nuclear and SMR?

That wasn't my question to you, was it?

A No. Will you repeat your question?

Q I'm going to move on to my next question.

A Okay.

Q There's a difference between the real-world actions the Company should take, meaning the resources it, in fact, should come before this Commission to seek a CPCN for, and whether or not it can model those to provide a modeling information to the Commission in these

parties.

Do you agree that there's a distinct difference between those?

A Absolutely, yes. This is a planning exercise. We're not asking for CPCN.

Q In light of all of the opposition the Company has gotten based upon its failure to model both long-duration energy storage and large-scale nuclear, don't you think it would be helpful if you are, in fact, confident that SMRs are and should be the selectable resource, to include those in at least one modeling run for the parties and Commission's consideration in a future IRP?

A We don't have that information. So we talk with large-scale developers as we talk with SMR developers.

And as I started my testimony this afternoon, the Company is not opposed to continuing to evaluate the consideration of traditional-scale nuclear.

The most recent example we have in the United States, the project was over double over budget and seven years behind. So it's my position that the Company, as most utilities United States are doing, is to prioritize our

efforts for the deployment of SMRs.

We're not opposed to looking at traditional nuclear and if an opportunity comes, we'll certainly evaluate it.

Q My question also applies to long-duration energy storage.

Is there any harm in including it as a selectable resource and seeing what the model does when it's included?

A If we have the operational data to support how the facility is going to integrate with the transmission system, if we understand the round trip efficiency, we understand how those new chemistries are going to behave, absolutely.

And I really look forward to the day when our Darbytown project comes online with the Form and Eos projects. That project is going to give the Company valuable information in how these long-duration energy storage facilities operate. We just don't have that data today.

So to model a technology where you don't have that operational experience is really challenging.

Q Is the operational experience that you get for SMRs as a result of the SMR project

development on your rebuttal Schedule 1 or does it come from somewhere else?

A As I've mentioned a couple of times, SMRs are derivative of existing technology. They are steam cycle plants that the Company well understands, that we know how they integrate with the transmission system. They are smaller versions of existing operating plants for which we have 53 years of experience.

Q Can you understand why parties would be just a little confused when we have operational experience with large-scale nuclear -- and, sure, it has its problems, but it, in fact, operates, North Anna. Whereas we don't have any actual, in-place SMRs in the country, but it is based upon technology with which we are familiar, why it's confusing that the pluses and minuses and the two of those don't somehow warrant putting them before the Commission for consideration?

A As a nuclear guy, no, I don't find it confusing. But I hope I've tried to explain how these small modular reactors are derivatives of existing technology. And I'm happy to meet with Staff and others to certainly describe that in more detail.

And certainly there's a fleet of smaller nuclear units off the coast of Norfolk that is not incredibly different than SMRs. I mean, the manufacturing is certainly different. But I think we have a good understanding about how the physics and neutronics work in these facilities.

Q Turning to the solar build limits, are you familiar with the fact that in both the 2024 and 2025 General Assembly sessions, legislation was proposed by Senator Creigh Deeds --

A Yes.

Q -- that would have affected local government's authority with respect to solar projects?

A I am familiar with the legislation that did not get passed, correct.

Q But my point is, is that it is possible, is it not, that the General Assembly could choose to take steps to address the power of local governments to fully deny and/or prohibit solar generation within their confines; is that correct?

A Yeah. The preemption legislation is a pretty hot topic in the Commonwealth, and it's my opinion that if preemption legislation comes to fruition, it's going to continue to be difficult

to deploy projects in localities that do not want the projects there.

Q And I'm not attempting to pass judgment on whether or not legislation should or should not be passed.

I'm just pointing out that when it comes to modeling with the build limits, hypothetically the General Assembly could see, hey, look at this model, if we could build "X" number of megawatts of solar, that would be the best cost option for ratepayers. Should we do something about it?

That is something the General Assembly could take a look at based upon modeling in this IRP, couldn't it?

A I don't know that I would recommend our modelers to start modeling hypothetical scenarios on legislation that didn't make its way through.

Q That wasn't my question. Would you like me to ask it again?

A Sure.

Q Yeah. My question was that there is modeling that was done in this case, there was the -- I believe the stakeholder case and then I think the IdeaSmiths, both of which proposed higher levels of solar.

Do you recall those models --

A I do. And we reiterated we don't agree with those assumptions.

Q I understand.

But the General Assembly could take a look at that and see that the permitting issues that are prohibiting solar from being passed may need to be addressed if we want to make available to ratepayers this lowest cost resource.

Do you agree with that?

A I agree the General Assembly has the authority to prohibit, outlaw solar, or remove barriers to solar. They have the authority to make those types of changes to legislation.

MS. GRUNDMANN: Thank you. Those are all the questions that I have.

COMMISSIONER HUDSON: Just in time. Microsoft?

MR. QUINAN: No questions, Your Honor.

COMMISSIONER HUDSON: City?

MR. WINSTON: Just a couple, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. WINSTON:

Q Piggybacking off of Walmart's counsel's questions about what you've termed -- and I'm

going to borrow the term -- the preemption legislation that did not pass.

But are you saying that it's your understanding that a major factor in the build limit for solar in the IRP was the legal constraint that is local permitting requirements?

A No, I'm not saying that. I'm saying a -- generally a consideration in selecting how many megawatts can be deployed in any given year in the Commonwealth, one of those key factors is getting a local land use approval to build and construct and bring those projects online.

Q And so I think that what you just said I thought would have necessitated a different answer to my question, so I'll try it again.

The build limit that was imposed incorporated this constraint that you're speaking of that is derived from the requirement that these projects get approved locally, which is, you would agree, a legal constraint on the build limits, right?

A It's one consideration of many, yes.

Q So the Company generally takes legal constraints into consideration when it runs its models and places parameters on it?

A No. As a developer, I don't lean on a whole bunch of legal interpretations. I lean on just the year-over-year experience and in working with developers and evaluating their pipeline, and looking at the PJM queue and determining, hey, what is a realistic number that we could envision being brought online year over year.

Certainly -- I certainly track what's going on in localities, and that's a consideration, but I don't -- it's not a deep dive into the legal considerations of local permitting.

Q But based on what you just said though, it is the case then, that because there are new natural gas facilities that are brought online despite that the prohibition of the same in the VCEA, that the Company did not view that as a legal constraint that would make development of those facilities unlikely in the same way that they limited the build limit for solar because of these legal constraints?

MR. DANTONIO: Objection. I think there's a few here, but I think this is far outside the scope from a modeling perspective based on what this witness is testifying to.

MR. WINSTON: I mean, Your Honor, the

witness tied the build limit on solar to a legal constraint. I understand that he's not the modeler, and I understand that it's difficult to be discreet. These topics are not discreet topics. I think the witness opened himself up to this line of questioning by suggesting in his rebuttal that the build limit on solar was a function of this legal constraint of local permitting requirements.

COMMISSIONER HUDSON: I'll allow you to continue but let's make sure to keep it within the scope moving forward.

MR. WINSTON: Yeah, Your Honor, that was actually my final question.

THE WITNESS: As I mentioned, local land use permitting is one constraint of many. It, among many factors, is what goes into establishing that -- what I would call a boundary condition in the model.

MR. WINSTON: Sorry, Your Honor. Just one more.

BY MR. WINSTON:

Q So essentially, what we have in the model that the IRP contains is our model runs that ignore the prohibition on new natural gas

facilities being brought online.

And my question to you is: Isn't that an example of a model that runs in contrast to the legal parameters that are out there right now in order to achieve some other planning goal?

A I can't speak to natural gas development. I'm not involved.

MR. WINSTON: Nothing further, Your Honor.

COMMISSIONER HUDSON: Thank you.

Consumer Counsel?

MR. FARMER: No questions.

CROSS-EXAMINATION (Reb.)

BY MS. PIERCE:

Q Hello again, Mr. Flowers.

A Hello.

Q I first want to say I appreciate your enthusiasm for SMRs and your testimony today.

A And solar.

Q And solar, right, to be fair.

And I would like to take just a step back for a second, and the reason we're talking about SMRs in this proceeding is that in the Company's model and the build plan BCA with BPA, which I put up for reference on the overhead, under nuclear -- nuclear here is SMRs; is that correct?

A That's correct.

Q Okay. And so this shows that beginning in years 2035, there are -- the model selects 268 megawatts of SMRs; is that correct?

A That's correct.

Q And then it does so again in 2036, in 2037, 2038, and 2039; is that correct?

A That's right. It's essentially one unit per year.

Q Great. Thank you. So I want to talk about your rebuttal Schedule 1, and you did touch upon that in surrebuttal a little bit.

A Yes.

Q And six projects are listed here that the Company relies on to talk about, you know, SMRs and what's happening in the industry and where various projects are; is that right?

A That's right.

Q And you did -- you did indicate that this NuScale project, that was canceled in November of 2023; is that correct?

A No. I mean, that project is just highlighting the NuScale design. It's not speaking specifically to the UAMPS project.

Q Right. But your live testimony today was

that that bigger project was canceled in November of 2023?

A That's right. I brought it up because that was mentioned earlier in the week, correct.

Q Right. So I take it then that the Company's relying on this as a way of useful reference points in the technology up and to the point that it was canceled; is that fair?

A Yeah, it's information we're providing to give an indication of the progress of various designs that are taking place in the United States.

Q Okay. But you would agree with me that since the project was canceled it won't reach commercial operation?

A That project in particular won't but they are continuing to proceed with their design.

Q Okay.

A And the work that went into getting their combined operating license could be redeployed for another project.

Q Are you aware of it being redeployed as of today?

A I'm not today at this time, no.

Q Okay. All right. Thank you.

And I want to briefly talk about -- you mentioned the Company's case on -- again, just placing this overhead for reference to hopefully move things along.

The Company filed Case No. PUR-2024-00205, a rate adjustment clause for SMR costs; is that correct?

A That's correct.

Q And you're actually a witness in that case; is that correct?

A I am.

Q Okay. And my understanding -- so that case is still pending before the Commission; is that correct?

A Correct, we have the hearing in May.

Q And in this application -- and this is just at page 3 -- the Company indicates that SMR development can take a long lead time, approximately 10 years to develop; is that correct?

A Yeah. Generally 10 years from identifying a site.

Q Okay. And it also indicates -- and I can pull it up if I need to -- but the Company's application in the case, the Company has not made

a final decision as of yet if it's going to deploy an SMR at North Anna; is that correct?

A That's correct.

Q Okay. And it goes on -- so the cost recovery that the Company is seeking in this case is -- I think it refers to Phase I.

Does that sound familiar?

A Yeah, the legislation that was passed, Senate Bill 454, allows the Company to petition the Commission in phases for what I characterize as early development-related cost. So you could petition more than once for a single site, multiple SMRs, but a single site you can petition in phases.

Q Okay. And can you just give me a little more detail about what Phase I encompasses?

A So Phase I encompasses things like more detailed site evaluations at the North Anna site; that can be environmental work, other types of surveys that are needed to diligence the site itself. And then technology selection, so evaluating the various SMR technologies, and can include things like renewing the early site permit that we have at North Anna.

Q Okay. And you referenced, a couple times

now I think, Senate Bill 454.

Would you agree what Senate Bill 454 turned into is 56-585.1:14?

A I think that's right. I don't look at that statute specifically.

Q All right. But that statute, at least, is what this case was brought under; do you agree with that?

A Yes.

Q So Phase I is just the initial administrative process and maybe looking at sites --

A I don't know if I'd characterize it as administrative. It's technical and feasibility and technology reviews, site due diligence.

Q Okay. And again, the Company has not made a decision if it's going to deploy SMRs as of yet?

A Correct. The Company has not made a decision to deploy SMRs. And the intent of the legislation is not to deploy an SMR, it's really just to do the groundwork required to further evaluate.

Q Right. And that's what the Company is seeking in the current case; is that correct?

A That's correct.

MS. PIERCE: Thank you. No further questions.

THE WITNESS: Thank you.

COMMISSIONER HUDSON: Dominion redirect?

MR. DANTONIO: Yes, just one quick line.

REDIRECT EXAMINATION (Reb.)

BY MR. DANTONIO:

Q Mr. Flowers, counsel for Sierra Club pointed out that the Company used different annual solar build limits in the 2023 IRP, right?

A That's correct.

Q The 900-megawatt build limit in the 2023 IRP was used through 2038, right?

A That's correct.

Q And then a different limit was used after 2039, right?

A That's correct.

Q Okay. In the 2023 IRP, 2038 was the end of the planning period, right?

A That's right.

Q And that 900-megawatt limit in the 2023 IRP was held constant for the whole planning period through 2028?

A That's right.

Q Okay. So in the 2023 IRP and in this 2024

IRP, the Company is using the same annual build limit for solar over the planning period, right?

A That's correct.

MR. DANTONIO: No further questions.

COMMISSIONER HUDSON: Thank you very much.

The witness is now excused.

THE WITNESS: Thank you. It was a pleasure.

COMMISSIONER HUDSON: Thank you.

MR. WINSTON: Your Honor, I have to -- a hard departure at 5:30. And I spoke to counsel for the Company, and it's acceptable to them to take Mr. Hubbard out of order, and he's the only witness that the City has --

COMMISSIONER HUDSON: Sure.

MR. WINSTON: -- cross for. And so I haven't -- so I haven't consulted with the other parties.

COMMISSIONER HUDSON: Any objections?

MS. PIERCE: No objections.

MR. DANTONIO: We can do Mr. Martin now and then see how far we get and then do Mr. Hubbard, whatever preference the Commission has.

COMMISSIONER HUDSON: Yeah, let's do

Mr. Hubbard right now.

MR. DANTONIO: All right. The Company calls Michael Hubbard.

COMMISSIONER HUDSON: Mr. Hubbard, let me just remind you, you're still under oath.

MR. HUBBARD: Yes, sir.

MICHAEL T. HUBBARD, recalled as a rebuttal witness, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MR. DANTONIO:

Q Good afternoon, Mr. Hubbard.

A Good afternoon.

Q Are you the same Michael T. Hubbard that offered testimony on direct?

A Yes.

Q And do you have with you a document entitled Rebuttal Testimony of Michael T. Hubbard, consisting of a one-page summary and 10 typed pages of questions and answers, which was filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q Was that document prepared by you or under your supervision?

A Yes.

Q Do you have any corrections or additions to that document?

A Yes. On page 2, line 12, I cite to Case No. PUR-2024-00124. I would change it to Case No. PUR-2024-00120.

Q All right, thank you. I'll leave that up there for just a second.

With that revision, if you were asked the questions appearing there, would you provide the same or substantially similar answers?

A Yes.

Q Okay. With that revision, do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes.

MR. DANTONIO: I'd ask that the rebuttal testimony of Michael T. Hubbard in public version only be marked for identification and admitted into the record.

THE BAILIFF: The rebuttal testimony of Michael T. Hubbard will be marked as Exhibit 72.

(Exhibit No. 72 was marked for identification.)

MR. DANTONIO: Thank you.

COMMISSIONER HUDSON: Before -- let me just get that. The rebuttal testimony marked and described as Exhibit No. 72 is admitted into the record.

(Exhibit No. 72 was admitted into evidence.)

MR. DANTONIO: Thank you.

BY MR. DANTONIO:

Q All right. Mr. Hubbard, several public comments have been filed in this proceeding requesting additional engagement between the Company and localities on DSM EE, including City of Arlington, Charlottesville, Loudoun County, and, of course, we have heard from the City, too, during this proceeding.

Do you recall these comments? And do you have a general response?

A Yes, I do recall them. And the Company is happy to work with the localities to raise awareness on the Company's portfolio and other programs. And all of the parties are invited to attend our DSM stakeholder meetings. It's a process where we receive programmatic ideas, develop programs, and also report on EM&V results and collaborate on customer participation and

other topics. And there's also been a number of subgroups created to target commercial programs as well as income and age-qualifying programs and so forth. So there's a lot of opportunities for discussion.

Other stakeholder engagements are the VCEA IRP stakeholder process as well as there's an organization that many of the County munis and other entities, like Dominion and others belonging to the Virginia Energy Efficiency Council, they've got an upcoming spring forum on May 28th.

Q Okay. And in addition to these stakeholder opportunities, can you provide any other examples of what the Company does to ensure that these localities have the opportunity for additional engagement?

A Sure. As I just mentioned, you know, always happy to have discussions with localities. We've got those ongoing quite frequently. And depending on the level of interest in these meetings, you know, we're also willing to bring up those topics in the subgroups and other stakeholder processes I just mentioned.

But just as an example, last week one of our implementation vendors and our Staff had a

booth at Chesterfield County Earth Day promoting our residential, nonresidential programs. In May of last year, another example, the Fairfax County Green Business Partners Organization reviewed a lot of our nonresidential programs. And we've got an upcoming event -- I know one of the entities that filed a letter, a public letter -- we've got an event coming up with Loudoun County, the environmental commission, to promote our program.

So a lot of good opportunities there and willing to have further discussions. So we'll continue to keep working with counties to support the awareness and efforts to promote DSM.

Q Great. A number of parties have stated over the past couple of days how important it is for the Company to expand its DSM options so the Company can meet their VCEA targets.

How would you respond?

A Yeah, you know, we have -- right before the Grid Transformation and Security Act in 2018 and then the VCEA in 2020, we went -- and pre-2018 we had about seven programs. You know, we've got approximately 40 active programs now when you look at our residential and nonresidential programs.

So we have, you know, filed anything cost-effective that we have been able to obtain bids from the market, so, you know, we've been very pleased with that.

In fact, the GTSA had a goal in it that said that the Company should propose, by 2028, $870 million worth of programs. We have exceeded that goal with our current filing. We're at 934 million in energy efficiency proposed programs. And if you add our demand response to that, we're over a billion dollars worth of proposed programs.

Our current case that was just mentioned, PUR-2024-00222, we've got a number of new proposed programs as well as expanding on some of our programs like data centers and our small business program. We've got a number of DR programs that we're bringing for the first time. But that overall five-year budget increases, you know, projected spend of a little over $222 million. So the Company, in short, is just bringing all cost-effective programs that we can find.

You know, key component, again, is the voluntary nature of those programs. But we keep working diligently on awareness. We've got a

awareness effort. Recently, the Commission approved a general awareness budget a few cases ago. That's been increasing awareness. We've got measurements that show that our customer awareness is up 30 percent or over that.

So we're very pleased with how things are going.

Q Great. Last question for you. There's been a lot of discussion during this proceeding regarding data centers and their impact on the load forecast. I believe there's discussion with Dr. Stover about it from Sierra Club counsel. There's also discussion just this morning from City counsel with Mr. Blackwell on this issue.

And you're generally aware of those discussions, correct?

A I am. I heard that discussion, thank you.

Q Okay. Can you explain some of the initiatives the Company has taken in the DSM space with respect to data centers?

A Sure. We've got a number of programs that data centers have either participated in or have expressed interest in. We have a pipeline of continual discussions, you know, that ranges from our new construction program to HVAC, lighting.

There's a -- what we call our prescriptive program, but that's basically just a suite of measures.

But we also filed for expansion of our data center program with more meaningful measures for data centers that are cost-effective measures. The reason being, when we initially got our data center, slash, server room program approved, it was during a time frame where the -- there was a limit on size. If you were a 500kW and above, which is about the size of a mid-sized grocery store, was automatically exempt from the DSM Rider, from paying the rider, so you couldn't participate in that.

So in 2020, that exemption level got eliminated, and so we were able to now not only extend that program, but we're looking to greatly expand that program this year.

MR. DANTONIO: Great. Thank you. This witness is available for cross-examination.

MR. BENFORADO: No questions, Your Honor.

COMMISSIONER HUDSON: NRDC?

MR. JOHNS: Just a couple questions.

CROSS-EXAMINATION (Reb.)

BY MR. JOHNS:

Q Hi, Mr. Hubbard.

A Good afternoon.

Q I just had a quick question. In your rebuttal testimony you emphasize the requirement that programs be cost-effective.

I first just wanted to ask you, in this IRP and prior IRPs, the Company's modeled energy efficiency programs that are cost-effective under the rules that are generally applicable in DSM proceedings, right?

A That's correct.

Q Okay.

A For DSM programs, yes.

Q And, really, this is just kind of a question just to understand where we are in the process.

Those have not included -- I'm showing you some language from 56-599 on Integrated Resource Plans, talk about a long-term plan for energy efficiency.

Heretofore, the Company has not considered, for example, reduction in emissions or reduction in carbon intensity in looking at a long-term plan for energy efficiency measures, correct?

A I don't think I'd agree with that. Our EM&V report shows reductions in emissions and things of that nature, yes.

Q Fair enough. But they haven't been part of the cost-effectiveness analysis for programs?

A We have followed the traditional four tests with no modifications to that test. And I'm not the expert on running those tests, but I can tell you that, with each of our submittals in the last several years, we have included, with our cost-benefit witness, social cost of carbon if the Commission so wanted to consider those costs.

Q Thank you.

You also note -- this is on page 2, and I think this was the subject of your correction on the stand here today, the stakeholder process, and I neglected to mark it on my copy, but this 2024 docket, correct?

A Yeah, that's the one we corrected, correct.

Q Sure. And certainly I believe that maybe they were filed the same day that you filed your rebuttal testimony, but have you followed that docket and are you aware that there are proposed regulations that have emerged from that at this

point?

A Yes. We were a participant in those, roughly, seven meetings.

Q And you would agree with me that -- of course, they're still proposed regulations, but if they were adopted, that would expand the set of energy efficiency programs that would be cost-effective, at least starting in 2029 in Virginia?

A I don't necessarily agree that that would expand it. Since the last changes in 2018 when it moved to three out of four tests, which was primarily, I think, proposed to get around the RIM test, which was failing most programs, we've had a hundred percent approval of our programs.

So I can't speculate as to what a future single cost-effectiveness test and any modifications to that test might do.

Q Well, my question isn't about the percentage of tests you get approved; it would be the number of -- sorry -- tests -- percentage of programs that are approved that you've put in front of the Commission.

It would expand the set of cost-effective programs that you might otherwise not put in front

of the Commission that now you would because of certain benefits being calculated?

A Well, just to be clear, we bring programs that we have learned about and that we hear about in the stakeholder process, so we take those to the market. And what the market can bring from a cost-effectiveness perspective, we have filed everything that we can find.

Q Yeah.

A So I'm unaware of anything that's been left behind in that regard.

CHAIRMAN TOWELL: Counsel, I'll just say, I think the Commission is aware of the point you're trying to get across.

MR. JOHNS: Yeah. Thank you, Your Honor. I have no other questions.

THE WITNESS: Good. Thank you.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: Thank you, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. REISINGER:

Q Good afternoon, Mr. Hubbard.

A Good afternoon.

Q I think I just have one or two questions for you, and I'm being honest about that.

You just referenced in your surrebuttal that a number of the parties have asked the Company to expand its DSM options to meet the Clean Economy Act targets; is that correct?

A I'm sorry, can you repeat that?

Q You discussed or you acknowledged --

CHAIRMAN TOWELL: We'll not count this rephrase against your two-question limit, Mr. Reisinger.

MR. REISINGER: Yes.

BY MR. REISINGER:

Q You discussed with your counsel and you acknowledge that a number of the parties have asked the Company to expand its DSM deployment in order to meet the Clean Economy Act targets.

A Yes, we've heard that discussion, yes.

Q And you gave a five-year budget for DSM and DR; is that correct?

A For the currently proposed DSM Phase XIII.

Q Okay. What was that five-year budget?

A It was roughly -- overall, it was 222 million. But give me a second and I'll get you that exact figure. But that includes -- it

actually was -- yeah, slightly over $222 million. And there's -- you know, roughly 137 million of that is energy efficiency, and another, roughly, 85 million is demand response programs.

Q Okay. And, Mr. Hubbard, are you aware the Company recently filed a base rate increase application in Case No. PUR-2025-00058?

A I'm familiar with it, but I'm not involved in that case.

Q And I want to ask you about a figure that appears on page 15 of that application. It states that the Company anticipates deploying on behalf of its customers over the next five years in excess of $40 billion.

Do you see that?

MR. DANTONIO: Objection. This is outside the scope, and the witness has just testified that he is not involved in this proceeding.

MR. REISINGER: If I can ask my question.

BY MR. REISINGER:

Q This $40 billion in capital spending, that would not include any spending on energy efficiency or demand response, would it?

A Not to my knowledge, but...

Q Okay. This capital spending would be

things like investments in physical generation, transmission, distribution, assets, correct?

MR. DANTONIO: Objection. Same objection.

THE WITNESS: We have our own rider, but, yes, I'm not in this proceeding. So thank you.

MR. REISINGER: No further questions. Thank you.

COMMISSIONER HUDSON: DCC?

MR. MURPHEY: No questions.

COMMISSIONER HUDSON: Walmart?

MS. GRUNDMANN: No questions.

COMMISSIONER HUDSON: Microsoft?

MR. QUINAN: No questions, Your Honor.

COMMISSIONER HUDSON: City?

MR. WINSTON: Just very briefly, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. WINSTON:

Q Mr. Hubbard, you -- in surrebuttal with your counsel you said that you're happy to work with localities to raise awareness and that everyone is invited to attend your interest meetings and that there are subgroups to target certain programs.

But the Company, to your knowledge, has

never attempted the type of data optimization, sharing, operation, program identification initiative that the City has requested the Commission consider in these proceedings; is that right?

A Not to the extent that I've read, but I would note that the potential study that we conduct across our entire system does get into quite a bit of detail on customer-specific information, residential and commercial building types, and things of that nature.

But we certainly haven't shared any specific building-type information, nor energy-specific information with the City.

And I mentioned, I think in my rebuttal, about privacy concerns potentially, but anyway...

Q And just to clarify, when you say that -- well, actually, strike that.

So here, this is from Appendix 3D of the Company's filing. And here it's quoting from the Company's filing in Case No. PUR-2023-00227, which set the 2026 to 2028 outside proposed targets for the VCEA energy efficiency targets.

And here it says that the Company assumed a 10 percent annual increase in cumulative

persistent savings, starting from the 2023 actual savings, which it then explains is consistent with the average annual increase observed from 2019 to 2023.

So does that mean that the year-on-year increase was just added for those four years and then divided by 4 and that's where 10 came from?

A I think, you know, I was a part of that case. I didn't run that calculation. But, you know, the 10 percent growth was just the average we saw across the annual increase, yeah.

Q And how does the 30 percent general awareness increase that you testified to just a moment ago, how is that factored into that 10 percent year-on-year average growth rate?

A I don't have a correlation between the two. General awareness, it's hard to equate exactly back to that. But it has definitely assisted with website traffic and hits, inquiries into the call centers, and enrollments have increased, but there's no direct correlation.

Q And then the second highlighted portion of this excerpt says that:

Regarding LGS opt-out customers' savings, the Company uses the actual savings and projected

savings based on historic opt-out incremental savings.

So just to clarify because I don't know if we've said this, the opt-out customers -- and that is customers who are not participants in the DSM Rider yet, so the initiatives they take on their own, those savings accrue towards the Company's VCEA savings targets?

A My understand -- that is what it says in the law occurs. And so, yeah, there's an annual opt-out process where companies have to submit quite a bit of information, including how they are reaching those savings, and has to be filed with both the energy conservation group, which I oversee, as well as the energy division at the Commission.

Q And so is it fair to say, then, that a lot of the savings that the Company is reporting are actually not really through the efforts of the Company. Those are just savings that their customers accomplish through their own initiatives but then are then -- you know, inure to sort of the reporting benefit of the Company?

A No. I'm not going to put a qualifier on -- or a judgment -- subjective judgment on that

word. I can say I know that there hasn't been -- compared to the number of customers who have the ability to opt out, there hasn't been that many customers that have opted out.

Q Okay. And then last question. You testified that now the Company -- the Company's expanded its programmatic offerings from 7 to 40 and that it has proposed $934 million in energy efficiency programs, and if you add DSM, you're over a billion? Or did I get that backwards?

A Well, I would -- instead of $934, 934 million, first off.

Q Sure.

A Then if you include the DR, we're over, yes, a billion.

Q But didn't you testify in the most recent DSM case that the Company's spend rate on those budget proposals, at least for Phase XII, is something like 25 percent, subject to check?

A Subject to check. I don't remember myself testifying to that, but subject to check, sure.

Q But the Company spend rates on -- are well below the budget for many phases of the DSM schedule; is that right?

A I don't have that figure in front of me.

I do know that some programs we have had to file early for additional funds because those programs have been popular and we've reached the cap sooner than anticipated. And others, because of the voluntary nature and some of the economic impacts, it's been a challenge to get participation.

Q Did you review Schedule 5 of Witness -- City Witness Freed's testimony, which is an energy efficiency agreement that was signed between a utility and the City of Sarasota, Florida?

A I vaguely remember a franchise agreement or something to that effect but I'm not an expert in those type of agreements.

Q So the Company has never attempted to enter into an agreement like that with a locality to try to drive these programs?

A In Virginia, it's kind of a unique situation, I believe the Commissioner mentioned it the other day, where nonjurisdictional customers, you know, when you look at, like, county munis and state government are under special contracts and, therefore, because they do not pay the jurisdictional rates, cannot participate in our programs.

So that's a large segment that

unfortunately cannot participate in our programs. You know, we sometimes explore the opportunities for those, is there an interest for those to be included when those contracts do come up, so that's always something that's a possibility. To date, that hasn't materialized.

I will say I know that a lot of counties and munis have taken advantage of performance-based contracting as an alternative. But notwithstanding, a lot of the counties I've spoken with and my team and the implementation vendors, the residents, we've been able to get on podcasts in different counties and use their newsletters to promote our programs. Because the residents and the businesses certainly can take advantage of the programs and impact the sustainability plans of those respective localities.

Q So drilling down, the outreach programs locally does drive -- engaging people locally does drive adoption of these programs, in your experience?

A That's exactly right, which is why we've got some events coming up.

MR. WINSTON: No further questions,

Your Honor.

CHAIRMAN TOWELL: Thank you.

COMMISSIONER HUDSON: Consumer Counsel?

MR. FARMER: No questions, Your Honor.

COMMISSIONER HUDSON: Staff?

MS. PIERCE: No questions, Your Honor.

COMMISSIONER HUDSON: Dominion, any redirect?

MR. DANTONIO: No redirect.

COMMISSIONER HUDSON: Thank you very much, Mr. Hubbard. You're now excused.

Let's take a 10-minute break before we go to the next witness. So we'll reconvene at 3:50. We're now in recess.

(A recess was taken.)

COMMISSIONER HUDSON: Dominion, please proceed.

MR. DANTONIO: Yes, the Company calls Brandon Martin to the stand.

BRANDON E. MARTIN, called as a rebuttal witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MR. DANTONIO:

Q Good afternoon, Mr. Martin.

A Good afternoon.

Q What is your name, position of employment, and business address?

A Yeah, my name is Brandon Martin. I'm the manager of business development at Virginia Electric and Power Company. Business address is 600 East Canal Street, Richmond, Virginia 23219.

Q Do you have with you a document entitled Rebuttal Testimony of Brandon E. Martin, consisting of a one-page summary, eight typed pages of questions and answers, and an Appendix 6A which was filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q Was that document prepared by you or under your supervision?

A Yes.

Q Do you have any corrections or additions to that document?

A Yes. On page 4, lines 14 through 15, I state PJM has not accepted any new queue requests since 2023 and stated the queue will not reopen for new requests until 2026.

I would like to revise that to say PJM has not accepted any new queue requests since 2023,

and with a specific exception for a two-week period where PJM will accept select projects into its reliability resource initiative.

Q Okay.

MR. DANTONIO: And can everybody read this? I'm seeing some squinting.

MS. GRUNDMANN: Can you leave it up for a little bit --

MR. DANTONIO: I'll try -- I'll leave it up, yes. Okay.

BY MR. DANTONIO:

Q With that revision, if you were asked the questions appearing there, would you provide the same or substantially similar answers?

A Yes.

Q With that revision, do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes.

MR. DANTONIO: I'd ask that the Rebuttal Testimony of Brandon E. Martin in public version only be marked for identification and admitted into the record as amended.

THE BAILIFF: The Rebuttal Testimony of Brandon E. Martin as corrected will be marked as

Exhibit 73.

(Exhibit No. 73 was marked for identification.)

COMMISSIONER HUDSON: The rebuttal testimony marked and described and as amended as Exhibit No. 73 is admitted into the record.

(Exhibit No. 73 was admitted into evidence.)

MR. DANTONIO: Thank you.

BY MR. DANTONIO:

Q Okay. Mr. Martin, have you been in the hearing room for the past couple of days?

A Yes.

Q Several interveners have raised issues with the fact that the Company did not include LDES, or long-duration energy storage, as a selectable supply-side resource in the 2024 IRP.

Do you recall some of that testimony?

A I do.

Q Okay. Taking a step back, can you explain what the Company means by LDES?

A Yeah. So long-duration energy storage -- maybe to step back, energy storage holistically is not a generator of electricity. It is simply taking energy storage that is produced at one

time, storing it, and discharging it at another time.

Now, the DOE defines long-duration energy storage as, you know, having a duration discharge greater than 10 hours. And the difficulty in this is that when you get into 10 hours and plus, there are many different technologies that have many different durations, such as 10 to 24 hours being long duration, 24 hours-plus being multiday, and you can get into seasonal types of storage.

Now, it's important to note, of all these different types of long-duration energy storage, that there's probably close to a hundred different types of technology that would fall under this category, and so all of those technologies are not created equal.

And the Company is very excited about pursuing long-duration energy storage, but it is an early-stage process. I think it's important to distinguish that during this process of study and evaluation, there's technology readiness levels, which measure the maturity of that technology.

But another important distinction is commercial readiness level. And that's not talked about very much. But that is largely, how mature

is the business that is going to support, ultimately, the manufacturing, warranty, and performance guarantees of said vendor? And there's a lot of start-ups in this company -- excuse me -- in this space.

And so many of these companies may have very different funding levels, and that funding may be supporting technology evaluation, but it may start to creep into funding commercialization. And so I think that DOE commercialization of long-duration energy storage is an important component.

Q Okay. Mr. Martin, during opening statements, Staff noted that the Company has received approval of an LDES project.

Do you recall that statement?

A I do.

Q Okay. Can you provide some additional information on that LDES project that has received Commission approval?

A Yeah. So we are very thankful for the GTSA, the ability that it created for us to even have a path to pilot long-duration energy storage.

The Eos project is currently on schedule to be placed in service on time. But the Form

project has been delayed, and pretty significantly. And we did provide updates to the Form product under Eos designation in the GTS update filed in March -- March 31st of this year, but I think it's important that during this process we are very actively trying to get real-world operating data, when we file the GTSA, as we're doing those pilot projects, everything from contracting to construction to ultimately operating is very important in the analysis of long-duration energy storage as a resource.

I think one of the other unique things about long-duration energy storage is, as I mentioned before, there's a lot of, if you will, noise in this space. And what I mean by that is that the claims that vendors have, have not been proven out by utilities, or oftentimes research firms like EPRI or Edison Electrical Institute and some of these others, and so a lot of the data that is provided and that is out in the public is unverified, and it's vendor-claimed data.

So I do want to be a little careful on the details around the Form product. We are very enthusiastic and excited about the future of that product, but it does have some hills to overcome.

Q Okay. Mr. Martin, do you recall the conversation Ms. Grundmann had with Microsoft Witness Stover regarding certain energy storage projects?

A I do.

Q And specifically, she asked about why the Company did not model an eight-hour lithium-ion battery.

Do you recall that?

A I do.

Q And do you have any comments on that?

A Yeah, so the Company has largely been focused on developing, acquiring, deploying, constructing, and operating four-hour lithium ion to date. We do not have any of our own eight-hour projects in the pipeline, nor do I know of any developers that are currently developing an eight-hour solution.

And I think the distinction there is that the Company is trying to do the four-hour energy storage really well, and there's a learning curve on that one.

We also have Bath County pumped hydro, which is an eight-hour energy storage system, 3000 megawatts, one of the largest in the world.

But we're also very much focused on this long duration, and these -- the future of what long duration could be and the technologies that are included in that.

Q Okay. Last question for you.

Do you recall the testimony a couple days ago from APV Witness Goggin, where he acknowledged PJM has historically low battery penetration but notes that the Company should not look to these historically low battery penetration rates as an indication of future penetration rates?

Do you recall that?

A I do.

Q Okay. And how would you respond?

A So in any given year, I don't know that PJM holistically has installed more than 59 megawatts of energy storage. But despite this information, we included 350-megawatt annual build limit, and I would argue that that is a very aggressive goal.

In the next 12 months, we plan to more than double what was installed in PJM last year with company-owned projects ourselves. But, again, I do believe that this is an aggressive approach and -- but we will continue to monitor

and make adjustments to the IRP build limits as we see trends and movement in this space.

I do think it is an important distinction that all energy storage PPAs -- and while I'm not the PPA manager, I do think it is an important distinction that all energy storage PPAs pre-CE-5 have been terminated, and I think that that's relevant and historical data.

MR. DANTONIO: Okay. Thank you. This witness is available for cross-examination.

CROSS-EXAMINATION (Reb.)

BY MS. CLANCY:

Q Mr. Martin, nice to see you. My name is Emma Clancy, and I'm appearing on behalf of Appalachian Voices.

Can you hear me okay?

A Yes.

Q Great. Now, I'd like to discuss some of your responses to Mr. Goggin, but before I do, would you generally agree with his testimony that, you know, if planned well, batteries can provide a range of diverse benefits, including to the transmission system, to the distribution system, as flexible resources, and as behind-the-meter resources that can be used in a virtual power plan

or a demand-response program?

A So I am not in any way, shape, or form the right witness for VPPs or behind-the-meter resource. I do believe that energy storage is a multitool, and there's a lot of benefits that different energy storage technologies provide to the grid holistically. But in my function, I'm on the generation side of the business, and so it is a -- energy storage is a generation asset.

Q And that's fair. I'm asking just about, you know, storage as a resource.

And you are the Company's battery or energy storage witness in this proceeding, correct?

A I am.

Q Now, let's start -- let's start on page 2 of your rebuttal testimony. And here you discuss the Company's build limits.

And just to be clear, the Company used a 350-megawatt build limit in this IRP, correct?

A That's correct.

Q And that limit is an increase from past IRPs, which have progressed from 250 megawatts in the 2020 IRP to 300 megawatts in the next following IRP, correct?

A That sounds correct, yes.

Q And, now, you note here that the Company has set this limit based on its own experience receiving and reviewing project proposals, correct?

A That's correct. Amongst other things, yes.

Q And looking below, yes, at lines 18 through 19, this limit is also informed by the lack of projects that are fully developed and permitted in the Commonwealth, correct?

A Yes.

Q And as you noted, this eclipses previous efforts in PJM and Dominion territory, right?

A It does.

Q And did you hear Mr. Laws' surrebuttal testimony on Wednesday?

A I did.

Q So you're aware that ERCOT interconnected 4 gigawatts of storage in 2024, correct?

A He may have said that. I don't recall.

Q Okay. Well, subject to check?

A Subject to check.

Q And that's over 10 times the Company's build limit, correct?

A It is.

Q And now I'd like to pull up your colleague's testimony.

Now, you were just in the room for Mr. Flowers' testimony, correct?

A I was.

Q And so you're aware that, you know, he's evaluating SMR progress across the United States, correct?

A Yes.

Q And his testimony notes that those SMR projects that are going on in several utilities in North America serve as useful reference points, providing valuable data and experience for future deployments.

So just to be clear, based on the testimony you just gave a second ago, the Company did not use the progress going on in other jurisdictions like ERCOT in setting its battery build limits, even though it did use progress in other jurisdictions to set its SMR build assumptions; isn't that correct?

A Well, I don't even think there's 4 gigawatts of energy storage in the interconnection queue right now.

Q There's -- we can disagree on that. But that's actually not my question.

My question is, can you please confirm that the Company looked to its historical data and its on-the-ground data for its battery build limits?

A So we did look to previous experience and then took a more aggressive approach.

Q And you just read Mr. Flowers' testimony that the Company, at the same time, looked to the SMR progress across the nation to set its SMR build assumptions, did you not?

A I saw the testimony there, but I don't know how it informed his build limits, so you'd have to speak with him.

Q You see this sentence here:

Several projects are already underway in the US and they will provide valuable insights and data helping to refine --

A I do.

Q -- and optimize future SMR deployments?

A I do.

Q Okay. Well, as you noted earlier, the Company has used the battery build limit -- excuse me -- has increased the battery build limit over

the past several years, but it assumed in this IRP that the 350-megawatt build limit would apply over the entire planning horizon, correct?

A That's correct.

Q Now, Dominion did conduct one sensitivity that progressively ramped up storage build limits; isn't that right?

I'll put it up on the screen for you. This is page 70 of the IRP. And that's the NCUC's directed sensitivity, looking at that.

A Yes.

Q And that scenario saved $9 billion compared to the VCEA with EPA portfolio; isn't that right?

A Can you show me where that is?

Q Yes. 102. This is 109.

A Save hundred million, okay.

Q And just -- I know it's kind of small, but it looks like this scenario ramped storage up from 300 megawatts to 350 megawatts to 550 megawatts in 2033 and 700 megawatts in 2037.

Does that look right to you?

A I see that.

Q Now, turning to page 33 of the IRP, do you see here where this describes how the Company

progressed from a 12-megawatt offshore wind pilot in 2020 to receiving approval for a 2.6-gigawatt offshore wind project in 2022?

A I do.

Q So wouldn't you agree that Dominion has experienced ramping up resource deployment at an even more extreme rate than reflected in the NCUC sensitivity?

A I don't know that I would agree with more extreme sensitivity. I was not involved with the offshore wind project, so how they went about the ramp, I can't speak to.

Q Well, I'm not asking about your specific experience, but do you see here that Dominion does have experience ramping up resource deployments at quite a fast rate?

A I do.

Q And you would agree that Dominion brings that experience to the table in any resource development?

A I do.

Q Now, I'd like to move on to some discussion about supply chain concerns that you discuss. Let's see. I think this is on page 4 through 5 of your testimony.

And so this is another reason why the Company thinks its build limits are appropriate, correct, supply chain concerns?

A That is a factor, certainly.

Q And, now, batteries aren't the only resources that face supply challenges, right?

A I would agree with that.

Q Right. We heard from Witness Scheller yesterday that gas turbines are also facing backlogs, correct?

A I believe that's what she said, yes.

Q And Witness Flowers also notes -- I'll go ahead and pull it up -- that the SMR build may present, you know, challenges such as supply chain disruptions but that the Company is looking for ways to mitigate or reduce those risks, correct?

Do you see that?

A I do see that.

Q And so has Dominion taken any steps to avoid supply chain challenges with batteries?

A Yeah, I'm actually very excited about this. I mean, we are working to onboard new vendors with respect to standard lithium-ion energy storage. But one of the main purposes of the pilot projects and the GTSA is exactly to take

out geopolitical risk and uncertainty as we're looking at newer technologies and things that may be safer products out in the industry, yeah. So...

Q So you anticipated my next question.

You sponsored testimony in the battery pilot case that we've been discussing today --

A I did, yeah.

Q -- regarding BESS-4, which evaluates two non-lithium technologies. I'm just going to pull up -- you know what? I'll also go ahead and get it marked as an exhibit and pass these copies out.

While we're passing those copies out, this is Exhibit No. 5 from the battery -- the most recent battery pilot docket, Case No. 2023-00162. And this is a discovery response that the Company provided to Staff. And specifically I'm going to look at the responses to these two questions:

What advantages does each of these chemistries offer? How do they compare to lithium-ion batteries?

And do you see here I have these two sentences starred where I think this discovery response reflects what you just said:

Most of the raw materials used in the

development of these projects -- products, these, you know, battery pilots, are not rare earth metals and are sourced domestically, which provides for greater accessibility, less competition, and lower costs.

And then you also anticipate operating this pilot alongside lithium-ion projects.

Is that what you were thinking of?

A Yes, yeah.

Q And so Dominion is already taking steps to diversify its battery fleet.

Wouldn't you agree?

A I would agree.

Q Now, next, I want to turn to --

MS. PIERCE: Are you going to mark this?

MS. CLANCY: Yes, thank you. I appreciate that.

I'll go ahead and mark that.

THE BAILIFF: The Dominion response to Staff Request 2-12 in Case No. PUR-2023-00162 will be marked as Exhibit 74.

(Exhibit No. 74 was marked for identification.)

BY MS. CLANCY:

Q Next, I'd like to turn to battery

interconnection challenges. You discuss this on page 4 of your testimony.

Now, just to start, you note that batteries face similar interconnection challenges as solar resources, but do you have any specific reason to dispute the chart provided on page 8 of Mr. Goggin's testimony showing that, on average, batteries take less time to interconnect?

A Is this for PJM? I'm not sure.

Q This is from -- I believe it's an average from Lawrence Berkeley National Laboratory, which would be national.

A I can't verify the accuracy; and that hasn't been my experience within PJM.

Q Okay. So you don't have any specific reason to dispute it?

A No, I'm saying I don't have any reason to validate it.

Q You didn't review it when you were preparing your rebuttal?

A I did not review this compared to PJM timelines.

Q Even though it's inconsistent with your experience?

A No, I did not.

Q Okay. Well, still on the topic of interconnection, I want to talk about two tools in particular that Mr. Goggin as well as Dr. Roumpani identified that could help speed up interconnection.

So, first, both witnesses recommend that Dominion use surplus interconnection service to bring batteries online quickly.

Do you recall those recommendations?

A I do recall that recommendation.

Q And the Company has not yet conducted analysis to identify surplus interconnection that could be used to accelerate interconnection of new resources; isn't that right?

A That's right, I have not done that study.

Q And to be fair, it was only recently that PJM sought and obtained approval from FERC to revise its tariffs to approve access to surplus interconnection service.

Are you familiar with these recent changes to surplus interconnection service in PJM?

A I have read the headline that FERC approved it in February but not the FERC order.

Q But you're generally aware of this development?

A I am.

MS. CLANCY: Okay. Well, I'm going to go ahead and ask that that FERC order be marked as evidence and pass it out.

Could I go ahead and mark this as evidence?

THE BAILIFF: The FERC order in Docket No. ER25-778-000 will be marked as Exhibit 75.

(Exhibit No. 75 was marked for identification.)

BY MS. CLANCY:

Q Now, here's the front page of the order. I'm going to jump to page 3. And here, FERC summarizes PJM's argument explaining that these changes to its surplus interconnection service, you know, provisions will allow project developers to have additional interconnection facilities constructed to accommodate the parallel operation of a surplus-generating unit and an existing planned generator, which is important for solar resources that are seeking to add a closed loop for storage resources.

And then moving on to page 7, we see a summary of some comments from entities, including

Dominion. And I'll just start:

These organizations aver that eliminating unnecessary restrictions on surplus interconnection service will facilitate improvements to the capacity value of grid resources, including the addition of battery storage resources to existing projects.

Dominion also, along with other entities, comments that:

The proposed changes will allow for faster expansion of generating facilities, which will help PJM address ongoing resource adequacy concerns.

And as you can see, this -- as you noted, this order approved those changes.

So my question to you -- first of all, can you confirm that that is Dominion Power that this order is referencing?

A Sounds like it, yeah.

Q Sounds like it, doesn't it?

So do you agree with FERC and PJM that these changes will make surplus interconnection service a more useful tool to address interconnection challenges for batteries in particular?

A So this effort was not through my team; it was through another team. So we're certainly glad to look into it further.

My limited understanding of this process is that, if there's additional space between what the generator can produce and energy storage could be placed there, then it may help expediate that process.

But my understanding -- and I'm learning as we go, but my understanding, it is a larger way to smooth out day-to-day operations, but it is not necessarily a way to hit new peak demands because you're going to still be limited by those capacity limitations.

So still learning. That's what I know about it at this time.

Q And do you recall that we just read that Dominion and other entities believe that it will actually help to address ongoing resource adequacy concerns such as how to serve that peak?

MR. DANTONIO: Objection. Mr. Martin has indicated what he knows about this proceeding. He's indicated that it is done through a different group at the Company. And he's already provided enough explanation as to his knowledge on this

subject.

MS. CLANCY: Mr. Martin has testified in rebuttal that interconnection is a major challenge to batteries, and I'm trying to understand whether that's a reasonable assertion. He's aware of this order. He can say what he does or does not know. I'm asking if what -- how he squares what he just said with the order that we are reading now.

COMMISSIONER HUDSON: Well, the witness has answered the question.

But do you have any more to add?

THE WITNESS: I do not.

BY MS. CLANCY:

Q Well, given the fact that PJM, FERC, and some other entities in Dominion think that these developments will help speed up interconnection and serve resource adequacy concerns, would your team or other entities in the Company be open to identifying where surplus interconnection is available on its system to try to take advantage of these efficiencies?

A The Company is always looking for where we can put additional energy storage resources for the benefit of the customer.

Q But you did just testify that you haven't

yet evaluated whether a surplus interconnection...
A That's correct.
Q So will you start to now because of these changes?
A Certainly look into it.
Q Okay. Thank you.
Now, just one more interconnection topic.
Do you recall Witness Roumpani's recommendation that the Company use capacity injection rights at the sites of retired coal plants for storage resources?
A I do believe that, but you may need to refresh my memory on where exactly that was.
Q Okay. Just pull up her testimony. Her testimony, I believe it starts on page 82, but most of it is on page 82 -- or starts on page 81.
Does this refresh your memory?
A I'm sorry, can you point me to where you're looking?
Q Yes. So it's all through here.
A Okay.
Q According to Dominion, the development of gas-fired generation can take place on brownfield sites to take advantage of existing capacity injection rights. However, these could also be

used for the installation of energy storage. Projects located on that site could qualify for the bonus credit, an additional 10 percent ITC or PTC.

A I see that.

Q So that refreshes your recollection?

A Yeah. But if you could leave it up, that would be great.

Q Okay. Yeah, sure.

And so you agree that -- that capacity injection rights can be used for a range of resources, both gas-fired and storage resources?

A PJM has a rule that allows you to reallocate capacity injection rights from retiring units.

Q Okay. It looks like you're confirming this discovery response; is that correct?

A I'd have to review it.

Q The highlighted sentence, you would agree with that?

A I would agree with it assuming that the unit is being retired.

Q Right. On a retired -- a site where units have been retired.

A Again, according to PJM rules.

Q Yes.

And now, according to Witness Compton's rebuttal testimony, there are no -- he mentioned there has to have been a unit that was retired, and he states that there are no existing unit retirements that could be used for the existing capacity injection rights to interconnect storage, correct?

A That's correct, I see that.

Q But are you aware that Dominion holds existing capacity injection rights of 1,138 megawatts at the site of the former coal plants in Chesterfield?

A Those have been reassigned already during that PJM timeline that was allowed, yes.

Q Right. So the Company plans to use those rights for a 944-megawatt CT, correct?

A That's correct.

Q But the Commission has not yet approved that plan, has it?

A No.

Q Okay.

MS. CLANCY: I think that's -- I think that's all. Just give me one second.

BY MS. CLANCY:

Q Just really briefly, on your surrebuttal, you were discussing the long-duration energy storage and the difficulties with modeling energy -- long-duration energy storage.

You're familiar with PJM's ELCC capacity ratings, correct?

A I am.

Q And so you're aware that those -- you know, PJM has capacity class ratings for 6-hour, 8-hour, and 10-hour storage, correct?

A I am aware.

Q And while the Company evaluates diverse long-duration energy storage technologies and figures out how to best model them, would there be any harm in at least using, say, a 10-hour battery as a placeholder in its modeling?

A So subject to check, I believe the vast majority of PJM's ELCC ratings are associated with pumped hydro. And I think that that is a very different classification and type of resource than many of the new nascent long-duration energy storage electrochemical technologies.

And so while it may be a placeholder in a 10-hour resource, I don't know that that's applicable for something like a Form 100-hour

battery because the operating parameters will likely be vastly different.

Q Let's see. Okay. But wouldn't it be worth exploring at least a placeholder so that there is some representation of the potential for longer-duration capacity storage?

A With a specific technology or duration?

Q With a longer duration than four-hour batteries?

A I'll put it this way: We are actively having conversations with PJM on, like, the Form battery, because it is so unique. And we are having those conversations. They are very interested in the pilot project to support that evaluation going into the future. So certainly it depends on the resource.

Q Okay. So even though the Company has PJM's support on this resource, it's not ready to include it in its IRP modeling?

A What I said was that PJM is excited to be part of the evaluation, but I did not say what their ELCC evaluation was at this time.

MS. CLANCY: Okay. I'll stop there. Thanks for your help.

COMMISSIONER HUDSON: Counsel, did you

want to move your two exhibits --

MS. CLANCY: Yes, thank you. Appreciate it.

COMMISSIONER HUDSON: So the document marked and described as Exhibit No. 74 is admitted into the record. And the document that's marked and described as Exhibit No. 75 has been admitted into the record.

(Exhibits No. 74 and 75 were admitted into evidence.)

MS. CLANCY: Thank you.

MS. HORAN: Sierra Club has no questions.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: No questions, Your Honor.

COMMISSIONER HUDSON: DCC?

MR. MURPHEY: No questions, Your Honor.

COMMISSIONER HUDSON: Walmart?

MS. GRUNDMANN: No questions, Your Honor.

COMMISSIONER HUDSON: Microsoft?

MR. QUINAN: No questions, Your Honor.

COMMISSIONER HUDSON: City?

MR. ELDRIDGE: No questions, Your Honor.

COMMISSIONER HUDSON: Consumer Counsel?

MR. FARMER: No questions, Your Honor.

COMMISSIONER HUDSON: SCC?

MS. PIERCE: I do have a few questions.

CROSS-EXAMINATION (Reb.)

BY MS. PIERCE:

Q Good afternoon, Mr. Martin. Some of this has been covered in your surrebuttal, so I'm going to try and pare it down.

And you already testified that you were a witness in the -- I'm going to call this the pilot program case; is that correct?

A That's correct.

Q Okay. And I want to make sure I understand what's on time and what was delayed.

My understand in this pilot, the Company asked for several different options. You had BESS-4, BESS-5, and BESS-6; is that correct?

A That's correct.

Q BESS-4 had two separate battery storage options, one was zinc hybrid for four hours, and the other was iron air for a hundred hours; is that correct?

A That's correct.

Q Okay. My understanding, based on the first annual report that was filed March 31st of

this year, what I read in the report was that BESS-4'S in-service date was August 1st of 2026?

A I believe that's correct, yeah.

Q Okay.

A That's the Eos product.

Q Is that the zinc hybrid, the four-hour?

A I'm sorry. Yes.

Q Thank you. Make sure we're talking the same language here.

All right. So that is -- that's an -- in-service date is August 1 of 2026.

So when you said -- and I believe you referenced Form was delayed -- were you talking about the 100-hour battery storage option?

A Yes.

Q Okay. And do you have a time frame on that part of the project?

A I believe in my update I marked it BS.

Q Okay.

A I'm certainly glad to talk about it.

Q Is there a general way you can reference it? And if not, that's fine. I didn't see it in this.

A Yeah, I'd say significantly being greater than 12 months.

Q Okay. All right. I appreciate that.

And with BESS-4, it was also talked about that, initially, it was going to be behind the meter and then possibly in the future it could move to the front of the meter.

Was the 100-hour, the Form battery, was that going to be behind the meter or in front of the meter?

A So I think at this point that is something we will still have to discern --

Q Okay.

A -- is when to bring a resource like that to front of the meter. And I do think that it's likely that it will operate behind the PJM meter as a load reducer. And it may need to operate in that form and fashion for a period of time as we learn how it actually operates, and then assess and evaluate taking it to a front-of-the-meter resource from there.

Q Okay. And just going briefly back to the timeline -- time frame, you said it was a significant delay.

Could you generally agree that it would occur within the current IRP planning period that ends in 2039?

A That it would be brought into service during that time period?

Q Yes.

A That's certainly the hope.

Q Thank you. All right.

And just briefly, my understanding, BESS-5, that was lithium-ion, just two hours, so it would not qualify as long-duration energy storage. BESS-6 was based on nickel hydrogen and that duration was actually 10 hours; is that correct?

A It is. I was not the witness for that project. That is on the distribution side of the house, which -- the functional code of conduct separation. I'm generally aware of it as being part of the same case, but it's not under me.

Q Okay. I understand. Being generally aware of it, though, and with the report that was filed this March, my understanding is that that in-service date for BESS-6 is December 31st of 2027.

Does that sound right?

A That's my understanding. But, again, I'm not part of it.

Q Okay. All right.

MS. PIERCE: Thank you very much.

No further questions.

COMMISSIONER HUDSON: Dominion, any redirect?

MR. DANTONIO: Yes, very briefly.

REDIRECT EXAMINATION (Reb.)

BY MR. DANTONIO:

Q Almost done, Mr. Martin.

So Ms. Clancy asked if you were able to verify a particular chart in APV Witness Goggin's testimony regarding interconnection timelines for various generation resources.

Do you recall that?

A I do.

Q Okay. And you were not able to verify the chart or the timelines in here, right?

A That's correct.

Q And you stated that this chart actually seemed inconsistent with your experience in PJM with respect to batteries?

A That's correct.

Q Okay. Do you have any examples of projects that would take longer than this chart depicts?

I'll note, while you may be thinking, that

I added that dotted line and it does slant a little bit. I was trying to give it -- I was trying to make it straight, but that didn't work.

A I'll say it this way, you know, once again, through PJM queue reform, projects largely ground to a halt. So projects that had interconnection queue positions, I'd say even dating back into 2019, 2020, are still waiting for interconnection ISAs.

And so the Company has been waiting on these interconnection queues for quite some time on some projects. And as we monitor the health of projects that are potentially going to be bid into us, a lot of it is dependent on this as well.

So everything that I have seen is that no matter the resource, they are following a timeline that is similar, so across all technologies.

MR. DANTONIO: All right. No further questions. Thank you.

COMMISSIONER HUDSON: Thank you, Mr. Martin. You're now excused.

MS. LINK: The Company recalls Dr. Vance.

COMMISSIONER HUDSON: Dr. Vance, let me just remind you you're still under oath.

DR. VANCE: Yes.

KATELYNN A. VANCE, recalled as a rebuttal witness, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MS. LINK:

Q Good afternoon.

A Good afternoon.

Q Are you the same Katelynn A. Vance that offered testimony on direct?

A Yes.

Q Do you have with you a document entitled, Rebuttal Testimony of Katelynn A. Vance, consisting of a one-page summary and 13 typed pages of questions and answers, filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q And was that document prepared by you or under your supervision?

A Yes.

Q And do you have any corrections or additions to that document?

A Yes. On page 4, line 6, "date center alley" should read "data center alley."

Q I'm just going to put it on the screen so

everyone can see it.

A Yes.

Q Although date center alley might be a little more fun.

Is there another correction?

A Yes. I would also add a closed quote to page 6 on line 20 after the word "affiliate."

Q Okay.

A And finally, on Footnote 5 on page 5 lists 2023 PJM Load Forecast Report. It should read 2024 PJM Load Forecast Report, available at the same link with the same letters, but if you change the 3 to a 4.

Q Okay. So it does reference the 2024 load forecast report in the text, correct?

A Yes, it does. In the text it has the correct word.

Q Okay. It's the correction to the link in Footnote 5?

A Yes.

Q Okay. And just changing the 2024 should get you there?

A Yes.

Q Okay. Thank you. With those corrections, if I were to ask you the questions appearing

there, would you provide the same or substantially similar answers?

A Yes.

Q With that -- those corrections, do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A Yes.

MS. LINK: Your Honor, I would ask that the rebuttal testimony of Katelynn A. Vance in public version only as corrected be marked for identification and admitted into the record.

THE BAILIFF: The rebuttal testimony of Dr. Katelynn A. Vance will be marked as Exhibit 75.

(Exhibit No. 76 was marked for identification.)

COMMISSIONER HUDSON: 75 or 76?

THE BAILIFF: 75 -- oh, excuse me. 75 --

MS. PIERCE: I have 76, Your Honor.

THE BAILIFF: 76, excuse me. Exhibit 76.

COMMISSIONER HUDSON: Thank you. The rebuttal testimony as corrected marked and described as Exhibit No. 76 is admitted into record.

(Exhibit No. 76 was admitted into

evidence.)

MS. LINK: Thank you.

BY MS. LINK:

Q Let's turn to some surrebuttal, Dr. Vance.

First, let's talk about the Staff's request for zonal modeling. Can you provide information from a transmission perspective on how the standards of conduct need to be adhered to in any development of an IRP and especially so from a four-zonal perspective?

A Yes. My filed rebuttal talks a little bit about standards of conduct generally and what transmission and generation co-planning could threaten to that if we provide -- the transitional organization provides nonpublic information.

However, I wanted to talk a little bit about some of the practical implications of what has happened in this IRP filing for information that we, the transmission organization, has provided to Witness Compton's team in their preparation and execution of their side of their work.

And so we provided the transmission import limits into the DOM Zone. So the transmission organization really functions looking at the

DOM Zone, not the LSE. We scaled our generation internally to the -- to our territory and then scaled the external generation and looked at what the transfer limits were for the actual transmission equipment.

And that information, we passed on to Witness Compton's team for them to be able to scale and run the rest of the analysis that goes into this whole process.

And so that was -- that process is fine, given their codes of conduct. But when we went to go write the IRP, we had to leave, like, that information blank in the document because we can't share that information publicly; like, that is not publicly available information. And so if we -- in the transmission organization, we really -- we're very conscientious of the standards of conduct because we are operating with non -- or nonpublic information a lot that could potentially bias the market, and so it's just something that we really think about a lot.

And in a lot of ways, our organizations are set up such that we really don't interact with the generation side of the house that often to help with just, like, general human

performance-related activities and making sure that we don't cross boundaries or serve as conduits to provide nonpublic information for them.

And so if we're doing this with all of the different zones, then it's just more information to keep track of and make sure that we are not transferring that in any way that is inappropriate. This is, in no way, shape, or form a reason that we can't do this in the future. It is just an acknowledgment of some of the practical implications associated with what this decision would create for us.

Q So just to break that down a little bit, because I know the Company speaks in terms of code of conduct as a general umbrella for a number of different codes of standards of conduct that apply to the Virginia Dominion enterprise, correct?

A Yes.

Q Okay. And when you say, given their code of conduct the generation function, is there a whole sort of numbering system the Company adheres to?

A Yes. So in the transmission organization people are a one or a six, mainly ones. Mr. --

Witness Compton's organization is six. Generation is a three or a four. And all that information goes in all of your titles for our Teams messages and in all of our e-mails and everything to make sure that we don't accidentally transfer information.

Q So when you say the import limit wasn't made public until the Company made its filing you're talking about the overall transmission import limit used for the IRP modeling in this case?

A Yes.

Q Okay. And that is nonpublic transmission information before the Company filed it publicly in this case, correct?

A Yes.

Q And what you're saying is that that was not shared with generation function employees until it was filed with the public?

A Yes.

Q Okay. So anything that happens on this four-zonal proposal would have to adhere to sort of standard of conduct rules sort of times four, is maybe --

A Yes.

Q -- a way to put it?

Okay, thank you. Let's move to another topic.

In testimony yesterday, Staff Witness Curtis pointed out in the Enverus report that there is no new transmission import in the IRP after 2031.

Could you please explain why that may be the case?

A Yes. So the PJM RTEP process is a five-year process. And Appendix 2C-2 includes projects out to 2031 because it included some end-of-life projects as well. And those we understand when they will be coming, in general, based on our assessment of the equipment that's in service now and then understanding kind of when the end of life would be based on that -- that equipment status, how it looks, how many times it's operated, et cetera. And so that kind of got that set of projects out slightly further.

But, in general, the PJM process is a five-year process, which means that every year we have a reliability open window in which PJM identifies, based on load and load increases, generation retirements, generation additions,

potential areas where the system may be overloaded.

And so in that window, they open for generally about 90 days, and the Electric Transmission and Planning Organization submits proposals to help address those reliability concerns. And so every year we have new projects that get submitted to PJM and then chosen and built out.

And so while the transmission -- the report says that there were no plans for transmission build out past 2031, that doesn't mean that there won't be some coming; it just means that there were not at that time because the open window had not occurred yet and has not occurred yet for, obviously, past -- this year will be for 2020 -- or 2030.

And so in -- when we filed this in October of 2024, we were -- we had finished up the 2024 open window. And in February of this year, PJM announced that they had collected two 765-kV projects that the Company proposed, along with AEP and First Energy, to help support of the -- the Eastern Interconnect area of our system.

And so that -- like, those are -- while I

think that, like, through looking at the history of what the transmission projects have done over the past several years, like I think that we may revise our methodology associated with what the transmission import limit would need to be. Should it increase slightly? Should there be step changes? I don't know. I think that it's something that we'll evaluate this year, especially in light of the past couple of years.

But traditionally, those projects haven't necessarily always meant that we were going to have more imports, and so that was part of the reason why we hadn't always included that as we move forward and study our import limits for transmission and as we extrapolate out into the future.

Q Okay. Turning to another topic, in Staff Witness Smith's surrebuttal he talked about transmission constraints and the need to time energy imports to pair with transmission constraints as he was talking about his four-zonal model.

Are there some other sources of information that you're aware of that could provide additional detail with regard to how PJM

is addressing transmission constraints?

A Yes. Although it has not actually come up in the IRP hearing to date, PJM not only performs a reliability open window analysis, but it also performs a market efficiency open window to evaluate solutions for market congestion.

The market efficiency open window is always performed after the reliability open window because reliability is PJM's first concern. The market efficiency open window actually hasn't been run in several years because there have been so many reliability projects and trying to make sure that all of those are properly vetted and understood that they hadn't spent the time to actually open the market efficiency open window.

And so this year we actually have, for the first time in a couple of years, on April 11th the market efficiency open window opened. And so there is one constraint that has been identified in our zone, Lanexa to West Point. And so our transmission planning team is working on proposal solutions to be able to provide to PJM to help support this.

And also just to clarify a little bit, the market efficiency open window is analyzed by

running 8760 cases through production cost-benefit analysis program. And so it does look at, like, how much congestion is expected on these facilities over periods of time. So it's not just like a PowerFlow where you're looking kind of at one snapshot and then identifying whether or not, for that given load or generation profile, you'd see problems.

It is looking at, like, what the chances are of that being -- of that line being overloaded over a particular period of time, and there are particular rules that PJM has set forth to bring these issues forward or not. But it is something that I just kind of wanted to generally point out as a mechanism through which there is support for congestion-related activities or concerns.

And in addition to the market efficiency open window and as a part of the reliability open window that they run every year, they perform a load deliverability study and a generation deliverability study.

And so the load deliverability study looks at the ability to transfer power into our footprint. The generator deliverability study looks at the ability to move power throughout our

footprint across different areas where we have generation kind of centrally located or -- it splits the zones up into -- it splits the Dominion zone up into some different regions and compares what they would expect to see if you increased all of the output of those particular units at different points in time.

And so that -- if there are violations associated with either of these studies in addition to the normal NERC compliance studies looking at contingency analysis, then upgrades can be performed to help alleviate these violations as well.

Q So if the Commission were to order the Company and Staff to study further the four-zonal proposal, would you be willing to sort of meet with Staff as well to talk through these different PJM reliability mechanisms so that they could see further what information is available?

A Yes, absolutely.

Q So since we're sort of on the multizone proposal, could you please explain -- now that we've gotten some more additional detail from Staff Witness Smith on how that could work, could you explain from a transmission planning

perspective what the multizonal proposal would mean from a transmission side?

A Yes. So as I explained just a couple minutes ago, when we perform the import analysis, you basically decrease the generation within our zone and then you increase the external generation outside of our zone and then see when you hit transmission limits.

And functionally what you would do for a four-zone grouping is that you would identify the key transmission constraints and transmission lines in those areas and set those up as their own little pockets where you would decrease their generation and then increase the generation around them.

And so it would work similarly, but -- and so I think in a lot of ways, like, there is feasibility there from a transmission perspective.

But as you saw in my direct testimony, like in this case when we were looking at the zone alone, there was still a lot of debate and discussion surrounding why we chose particular limits at the different times that we did for particular sets of projects that we felt could really impact transmission import capability into

our zone as a whole.

And so at that point, we have all of these transmission projects across our entire network. And so then you're managing the risk associated with all of them across the network and how they would all then impact each other and justifying, like, the interactions that may or may not occur if certain projects are finished or are not finished and how they will then impact the other regions in the Dominion zone.

And so it just -- it is not that it is not feasible; it just turns into a more complicated exercise because you're looking at more risk and more, like, slightly more intangible questions -- I shouldn't say intangible -- questions that require more engineering judgments across a larger set basically.

And so I would like to say in -- that as a part of -- like, just kind of thinking through how do we want to understand -- and I think that the main point of this whole line of questioning and the suggestions is that we want to be able to understand what transmission congestion will look like when you locate generation and load in particular regions.

And I think that there are potentially also other ways to understand that problem in the context of the IRP and, I mean, just kind of generally.

And one thing that I pointed to in my rebuttal was just that PJM actually, in support of their compliance with FERC 2023, has this program called queue point to help -- basically to help generation developers from anywhere in their footprint say this is a location where you would -- you can put in information about where you may want to inject generation, inject power, and then it can give you a distribution factor analysis of how they would expect for that power to flow and how it would affect lines and different ways that they -- you could understand what types of overloads you may see from a particular point of injection.

And so I just think that there is -- there are potentially quite a few ways to maybe understand what may be best to realize and plan ahead for and just understand what transmission congestion may look like in the future.

And I honestly look forward to speaking, if the Commission so desires and Staff so desires

to meet with other people as well, that -- a conversation where we can work through all of the different potential options we have.

Q Just for clarity in the record, that's FERC Order 2023?

A Yes.

Q And you said the system is called queue point?

A Queue Scope.

Q Queue Scope. And it's Q-u-e-u-e Scope?

A Yes.

Q Okay. Thank you.

All right. So just a final area, and this is turning to public comment that was filed on April 8, 2025, to the Commission docket in this proceeding by Ms. Ghiorzi and I think on behalf of other folks who share the last name.

Have you reviewed that --

A Yes.

Q -- public comment?

And do you have any comments as they relate to transmission in response?

A Yes. First, Ghiorzi claimed that underground transmission lines do not need to have easements. An easement is something that you

would need for a right-of-way, which is needed for maintenance of a transmission line. But underground lines do actually have easements and they do have to be kept clear of trees.

And so it doesn't mean that there's no -- it could decrease the size of an easement, that is fair. But it doesn't mean that there's no impact to anything nearby the route for a particular transmission line.

She also noted that there was potential to be able to route power lines near highways, but there are significant rules associated with how close transmission lines can be to highways. And it's not just a silver bullet to say that there's a highway system nearby and so you could route a transmission line next to it.

I also understand, based on her letter, that she's very concerned with the cost, and I'd like to direct her to the biennial review for her continued engagement.

Furthermore, her HVDC and HVAC, so high-voltage DC, direct current, lines and high-voltage AC, alternating current -- alternating current lines are something that she talks about extensively. And she says that PJM

has never really formally come out with an explanation for why HVDC is more expensive.

And there is really, truly extensive literature out there to explain how HVDC is a lot more expensive in particular situations. And the Company does continually evaluate HVDC when compared with HVAC solutions, especially as we're considering longer-distance high-voltage lines. And so as they become economically feasible, we will be submitting them.

Q Thank you.

MS. LINK: Thank you, Dr. Vance.

THE WITNESS: Thank you.

MS. LINK: That concludes what I have for you on surrebuttal.

And, Your Honor, the witness is available for cross-examination.

COMMISSIONER HUDSON: Thank you.

MR. ALLMOND: Just one question, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MR. ALLMOND:

Q Hi, Dr. Vance.

A Hi.

Q I just had a question about the market

efficiency open window. I think you said the project identified was Lanexa to West Point?

A Yeah, that was the constraint identified.

Q Constraint.

A Yes.

Q And I think you said that that was just opened on April 11, so no worries if you haven't sort of considered it yet, but is the Company thinking about grid-enhancing technologies or advanced conductors as a part of that solution?

A Advanced conductors are just a part of standard rollout these days. So I'd say yes for that.

Whether or not dynamic line ratings or any other GETs technologies are being evaluated, I cannot say with certainty. But I'd imagine it will be a part of the consideration based on how severe the overloads are.

MR. ALLMOND: No further questions, Your Honor.

COMMISSIONER HUDSON: NRDC?

MS. JAFFE: No questions, Your Honor.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: No questions, Your Honor.
COMMISSIONER HUDSON: DCC?
MR. MURPHEY: No questions, Your Honor.
COMMISSIONER HUDSON: Walmart?
MS. GRUNDMANN: No questions, Your Honor.
COMMISSIONER HUDSON: Microsoft?
MR. QUINAN: No questions, Your Honor.
COMMISSIONER HUDSON: City?
MR. ELDRIDGE: No questions, Your Honor.
COMMISSIONER HUDSON: Consumer Counsel?
MR. FARMER: No questions, Your Honor.
COMMISSIONER HUDSON: Staff?
MS. PIERCE: Yes, Your Honor.

CROSS-EXAMINATION (Reb.)

BY MS. PIERCE:

Q Good afternoon, Dr. Vance.

A Good afternoon.

Q I'm going to preface my questions by saying on direct testimony Mr. Flowers and then in rebuttal testimony Mr. Compton referred a number of questions to you, so I'm going to try to go with them -- go through them as efficiently as possible, but we might jump around just a little bit.

So first, I'd like to talk about

Appendix 2E to the IRP.

And you cosponsored this appendix; is that right?

A Yes.

Q Okay. So I want to talk about -- I want to understand a little better about what this means, energy interconnection and integration costs.

And Mr. Flowers and Mr. Compton gave me some information, but if we turn to the second page, Figure 1 here, Total Solar Integration Costs.

Do you see that?

A Yes.

Q All right. Can you speak to where these figures come from?

A Yes, I can.

Q Okay.

A Sorry. A little too excited.

Q I love enthusiasm.

A Yes, as a matter of fact, I can.

So my team worked with a consulting company, Rite Analytics, to help develop these cost analysis numbers.

And so what we did was we took the PJM

2023 Series RTEP Case 2028 -- so with the topology associated with the 2028 -- that had been identified through the 2023 open window and was planned to be in service sometime in the 2028-plus time frame, and we took that case and we integrated into that the PJM queue data for solar facilities in the Dominion footprint with the recognition and understanding that, generally speaking, not all of those projects will go through.

However, it is data that is available to us, and with our scope and resources didn't necessarily make sense for us to go through -- obviously, we did not use any withdrawn or any pause or any projects that were very clearly indicating that these projects were not going to happen, but for anything that was active, we included those projects in our transmission model in the locations where they are going to be built.

So we used the locational data associated with all of the different ISAs -- and I'm blanking on the first document that they have to sign that gives you the information about where the location would be -- but that information, and we put that into our model, and then we reran powerful

analysis and contingency analysis, and then calculated, based on some standard updated costs associated with 115 or 230-kV equipment replacements, and then normalized that out across the number of megawatts that you see here.

Q Okay. Thank you. That was a lot of information. I'm going to try to take it to a high level a little bit for me.

A Yes.

Q So when you were doing this analysis, does that mean you looked at different sizes of solar projects?

A Yes. All of the different -- well, I mean, I'm sure some of them are 50 megawatts each, but, like --

Q Generally speaking.

A Yeah, we looked at what the size of the actual project was.

Q All right. And you did say towards the end you were able to look at the specific locations where it was going to be built and include that into the analysis.

Did I get that correct?

A Yes.

Q Okay. All right. Thank you. That is

very helpful.

This section here, this appendix discusses solar. I did not see an equivalent section that discussed wind.

A Correct. So this is partially twofold. We actually did talk about this a little bit. But the reason why we're considering solar here is largely because we actually know where it will be. And there's so much of it in the short term that it does make sense to understand what the cost of it would be in the shorter term because the transmission network changes consistently, and so the costs of the interconnection in a particular location 10 years from now when -- or 15 years from now, because that's when this wind build-out in the IRP is recommend -- or is, like, called for -- yes, thank you.

So you'd have 2600 megawatts in 2039 and then the 800 in 2034. Those are not associated with -- like, those could be across many different projects. I mean, you could break up 2600 and say you want to inject 1300 megawatts in one place and 1300 megawatts in another, and so with that kind of uncertainty -- and also, like, truly, a transmission analysis at 2039 doesn't make any

sense. Like, even if I knew where they were thinking they wanted to inject that power, the understanding of what the transmission network would be at that time is not such that I'd be able to give you anything more than a back-of-the-envelope analysis, which we can do if that is something that you feel would be desirable. But it's not the same kind of information as what we're able to provide for solar.

I should also -- I'd like to just comment that the solar analysis cost is for the DOM Zone, not the LSE, and it is not -- the projects in the queue are not just our company's projects, they are projects from anybody who has entered the queue.

Q Okay. Thank you. That's helpful.

But just so I understand, looking at this chart with wind, and it says -- up here it says:

The portfolio also includes the development of five SMRs and 3.5 gigawatts of additional offshore wind.

My understanding right now there's only so many places offshore wind is going to be built.

So do you not think that locational

information could be included in the model?

A I think we could investigate it closer, but I also -- where that would necessarily tie in to the transmission system, even if it -- I mean, obviously, offshore is offshore, it's to the east of us, right, but that doesn't necessarily mean that it has to tie in to the transmission network in a substation that's like quite as close or that it couldn't be routed further north and something built out there. Like, there is options at that scale and at that time frame.

Q Okay. But you would agree, at least in this scenario, that for offshore wind may not be as broad as the solar that you were talking about, I guess?

A Yes.

Q Okay. All right.

MS. PIERCE: I do -- I am going to pass out an article that I'd like to have marked.

THE WITNESS: Thank you.

BY MS. PIERCE:

Q And this is a Dominion press release from February 3rd, 2025.

Do you see that?

A Yes.

Q Okay. And what I want to ask you about is on the second page, Project Cost Updated.

Do you see that paragraph?

I'll give you a minute, if you want, to read through it.

A Yeah, I have never seen this.

Q Okay. Fair enough. But you did recognize it's a Dominion press release, right?

A Yes.

Q Thank you.

I'm not going to ask you to validate the numbers or anything like that, but I do want to draw your attention where it says:

New electric resources, generation resources construction within PJM, like CVOW, are assigned costs by PJM that are deemed necessarily to effectively integrate these resources and ensure the reliability and stability of the electric grid.

Do you see that?

A Yes.

Q Okay. Is that the kind of interconnection and integration costs -- granted, for wind, not solar -- but is that the same kind of costs you're discussing in this section here?

A It is to some extent. And like an engineer, I'll say it's complicated. And so PJM has their queue process. And I am not -- we are not replicating the queue process in the IRP because we don't have the information that we would really need to be able to do that exactly. And certainly not that far out.

And so what we are doing is we are taking the data that we have and really trying to make our best guess with what makes sense here. And I suppose saying it's a guess gives myself less credit than I should. I mean, we're trying --

Q Sorry to interrupt. An educated guess?

A Yeah. I mean, and it's not necessarily even an educated guess. It's just that the volume of information that we have is from the queue information, needs to be processed in a way that can give us something that might actually be useful, right. And so we take that information, we put it into the -- we put it into the model, and we run these several studies. They are not -- the contingency analysis studies. They are not the full slew of studies that PJM runs as a part of their queue analysis every time that they perform it.

And also we are doing this to, like, say, okay, at this amount of penetration this is what you would expect cost to be. But that is based on the projects that were in the -- we just start at the -- like the beginning of when something has been entered, and assuming it hasn't dropped out, we include it. And then that's how we got up to the 20,000.

And so the PJM queue process, like, these are grouped into queues and then studied all together. And so whoever you're grouped with does affect what your cost will be. And so I can't say that all of the projects that we used to study these numbers would necessarily all be together in a single queue with PJM together. Like, their cost output could be somewhat different.

But again, in sort of the spirit of understanding what a cost estimate would be, felt like this was a sufficient engineering judgment to make and provide as a part of the IRP.

Q Okay. I appreciate that.

And I'll just draw your attention to, in this -- further on in that paragraph, it says that -- well, now I've lost it -- that these

transmission connection costs are unfixed costs.

Would you generally agree with that description? I'm not asking about largest. I'm just asking if it's an unfixed cost input?

A Unfixed here meaning that they can change?

Q Yes. And it may not be known at the beginning of a project?

A Yes.

Q Okay. And to -- would you agree that the interconnection integration costs here you're discussing with solar are unfixed costs with kind of parallel that --

A Yes. I would like to clarify, because I heard several times in the past couple of days you mentioned, like, that that -- that those costs necessarily had to do with the fact that these were intermittent resources. And they do not. It's any type of resource.

Q Okay.

A So, yeah, the fact that these are intermittent in this case, like, that -- it's just the largest set of resources that we have at the moment in the queue, and so that is a part of it. And I also believe that there was a state -- in 2015, we were required to perform this analysis

for solar in particular.

Q I'm sorry. Say that again. There was...

A I'm really -- one second.

In Case No. PUE-2015-00035, we were ordered to do this for the solar calculation.

Q Okay.

A However, I'll be honest. When we did this, I didn't know that it was solar alone. Like, we did genuinely have conversations about what this would look like for wind.

Q Okay. So you had conversations about it but it just didn't make it into the IRP; is that fair?

A Yeah, we didn't -- again, largely because I felt like I was concerned about it being not -- not necessarily -- it'd just be a little bit more complicated to justify.

Q Okay.

A Whether or not I could have written enough of a description around it to make it make sense for everybody, I don't know. Genuinely, like, after kind of reading this, like I understand that there's really a lot of information that we could add here to help provide color to this information.

Q Okay. I appreciate that. Going back to your intermittent resource question, so Appendix 2A, is labeled Renewable Energy Interconnection Integration Costs.

So is that -- are there interconnection and integration costs only with renewable energy?

A No.

Q Okay.

A There are integration costs with energy.

Q That's what I thought, wanted to check. And I appreciate that you said the Company would be willing to, you know, perhaps look into wind and other resources for these kind of costs.

Is that something you'd be willing to do for the next fully litigated IRP, which is not filed in 2025, be filed in 2026?

A I think I would want to have a conversation about what some of the expectation may be and, like, understanding might be from some of the numbers just so that we can provide what is actually helpful, rather than just a number that at some point -- like, I -- I do stand behind the way that we calculated this, but also I think input would be valuable.

Q Okay. So you're at least open to that; is

that fair?

A Uh-huh, yes.

Q Okay. And then just finally, I just want to place page 66 on, and this is -- this Table 5.2.2 shows the NPV results; do you see that?

A Yes.

Q And it's my understanding that this -- the NPV results does take into account the interconnection and integration costs; am I correct in that understanding?

A Yes.

Q Okay. All right. Thank you. And that would be just the integration and costs for solar?

A Yes, for the upgrades. The integration cost for the substations and that kind of thing for all of the different generating facilities is included -- is included there, though. So for, like, any of those that -- it's the upgrade costs that wouldn't be.

Q Okay. All right. Thank you for that clarification.

And then I'm going to switch gears and just have one or two questions about the -- you had a conversation that talked about the data

center going -- going offline and that -- those two incidents.

And I believe your testimony was that from going forward, the Company is having the data centers sign a FERC form or DOE form; do you recall that?

A NERC.

Q NERC, okay. Thank you. My question is, is the Company also going to go back and ask the data centers who were already online prior to that policy going forward? Like, are you going to go back and ask those data centers to sign the same form?

A I don't know -- so they signed the interconnection requirement when they request -- when they made their request for a delivery point service. I don't know that I can go back and make anybody sign anything, but I can request their data. And that is the plan and that is something that we're currently in the process of with multiple customers.

MS. PIERCE: Okay. Thank you. No further questions, Your Honor.

I would like to ask that this article be marked and admitted into the record, subject to

further cross-examination.

THE BAILIFF: Dominion's February 3rd, 2025 CVOW press release will be marked as Exhibit 78 [sic].

(Exhibit No. 77 was marked for identification.)

COMMISSIONER HUDSON: 78 or 77?

THE BAILIFF: Sorry, 77.

COMMISSIONER HUDSON: The document marked and described as Exhibit No. 77 is admitted into the record.

(Exhibit No. 77 was admitted into evidence.)

MS. PIERCE: No further questions. And thank you, Dr. Vance.

THE WITNESS: Thank you.

COMMISSIONER HUDSON: Dominion, any redirect?

MS. LINK: Just briefly, Your Honor.

REDIRECT EXAMINATION (Reb.)

BY MS. LINK:

Q Dr. Vance, I'm putting Exhibit 77 on the screen.

And you had said you had not seen that before --

A Correct.

Q -- today? Okay.

So where counsel for the Staff was asking about this one sentence on page 2 that says:

Network upgrades do not impact project construction or timeline and represented the largest unfixed cost input for the project.

Do you see that?

A Yes.

Q Okay. So where it says it represented the largest unfixed cost input for the project, it's talking about the CVOW project, correct?

A As I understand.

Q Okay. And just because the network upgrade costs were the largest unfixed cost in -- for CVOW doesn't necessarily mean it's the largest unfixed cost input for future offshore wind, does it?

MS. PIERCE: Your Honor, I would just like to clarify that I very specifically said I was not asking about the clarifying term of "largest." I was asking if she considered it an unfixed cost. I was very clear about that.

MS. LINK: Your Honor, counsel has put this document into the record. The witness

already said she had never seen it before. I allowed the question to be asked. I'm absolutely allowed to ask her to clarify her understanding as it relates to how offshore wind is molded in the IRP.

COMMISSIONER HUDSON: Please proceed.

BY MS. LINK:

Q I'll repeat my question.

A Thank you.

Q As the sentence says, that network upgrades represented the largest unfixed cost input for the CVOW project, that doesn't necessarily mean that network upgrades would be the largest unfixed cost input for another offshore wind project, does it?

A I truly can't say.

Q Okay. That's fair enough. You haven't studied it?

A No.

Q Okay.

A Not that closely. Not closely enough to make a statement here.

Q Okay. So we can't make any kind of statement with regard to a future offshore wind project and what network upgrades might be for

future offshore wind?
A No.
Q Fair enough?
Fair enough?
A Yes. Oh, yeah, not for a total hypothetical.
MS. LINK: Okay. Thank you. No further questions.
COMMISSIONER HUDSON: Dr. Vance, you're now excused.
THE WITNESS: Thank you.
MS. NIELSEN: Your Honor, the Company recalls Kourtnie E. Sunkins.
THE HEARING EXAMINER: Ms. Sunkins, let me just remind you, you're still under oath.
MS. SUNKINS: Yes.
KOURTNIE E. SUNKINS, recalled as a rebuttal witness, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION (Reb.)

BY MS. NIELSEN:
Q Are you the same Kourtnie E. Sunkins that offered testimony on direct during the course of this proceeding?
A I am.

Q Do you have with you a document entitled Rebuttal Testimony of Kourtnie E. Sunkins, consisting of a one-page summary, three typed pages of questions and answers, which was filed in public version only in this proceeding on March 25th, 2025?

A Yes.

Q Was the document prepared by you or under your supervision?

A It was, yes.

Q Do you have any corrections or additions to that document?

A No.

Q If you were asked the questions appearing there, would you provide the same or substantially similar answers?

A Yes, I would.

Q Do you wish to sponsor that document as your rebuttal testimony in this proceeding?

A I do, yes.

MS. NIELSEN: I'd ask that the rebuttal testimony of Kourtnie E. Sunkins be marked for identification and admitted into the record.

THE BAILIFF: The rebuttal testimony of Kourtnie E. Sunkins will be marked as Exhibit 78.

(Exhibit No. 78 was marked for identification.)

COMMISSIONER HUDSON: The rebuttal testimony marked and described as Exhibit No. 78 is admitted into the record.

(Exhibit No. 78 was admitted into evidence.)

MS. NIELSEN: And the witness is available for cross-examination.

COMMISSIONER HUDSON: Thank you.

Appalachian Voices?

MR. ALLMOND: No questions, Your Honor.

COMMISSIONER HUDSON: NRDC?

MS. JAFFE: No questions, Your Honor.

COMMISSIONER HUDSON: United?

MS. POLLARD: No questions, Your Honor.

COMMISSIONER HUDSON: Clean Virginia?

MR. REISINGER: No questions, Your Honor.

COMMISSIONER HUDSON: DCC?

MR. MURPHEY: No questions.

COMMISSIONER HUDSON: Walmart?

MS. GRUNDMANN: No questions.

COMMISSIONER HUDSON: Microsoft?

MR. QUINAN: No questions, Your Honor.

COMMISSIONER HUDSON: City?

MR. ELDRIDGE: No questions, Your Honor.
COMMISSIONER HUDSON: Consumer Counsel?
MR. FARMER: No questions, Your Honor.
COMMISSIONER HUDSON: Staff?
MR. ZIELINSKI: Sorry.

CROSS-EXAMINATION (Reb.)

BY MR. ZIELINSKI:

Q I promise it'll take less than five minutes and out of here real quick.

A Okay.

Q Okay. So I'm going to place this document on the overhead. This is residential build projection. Find the right orientation for this. I know it's hard to see and I even blew it up from the original trying to make it more legible. VCEA with EPA Company Methodology. This was in Mr. Welsh's testimony as his Appendix A.

Please forgive the legibility of my handwriting.

Do you recognize this document?

A I do.

Q Okay. Can you briefly explain what the phrase "Company methodology" means in the context of this document?

A The Company methodology -- well, the

Company submitted two different methodologies, a Company methodology and directed. So the Company methodology is where the Company feels that we need to show that there are different allocations that take place between our customer classes and -- let me back up a little bit.

The directed methodology has been directed for us to hold that allocation the same throughout the whole planning period, which in this case was 15 years, so we would be holding the current allocation for all of our classes the same in the directed methodology.

Whereas in the company methodology, we believe that we know our sales growth is changing; therefore, our allocations would change over time.

Q Okay. Would you agree that the Company methodology in this bill impact analysis projects that the proportion of costs allocated to the residential class will decline over time?

A Say it -- I'm sorry, say it again.

Q I'm sorry. Do you agree, this isn't reflected in the table, this is --

A It's more so being able to hear you. Sorry.

Q Okay. I'm sorry.

Would you agree that the Company methodology in this bill impact analysis projects that the proportion of costs allocated to the residential class will decline over time?

A No -- will decline over time? No, not necessarily -- so you said that the residential class allocation would decline over time in this methodology?

Q Under the Company methodology.

A For this no data center load growth?

Q Not necessarily on here but just in general across --

A In general --

Q Yeah.

A Yes, in general across the Company methodology, we assume that the -- we believe that the residential class would decline due to load growth, sales growth across all the classes.

Q Okay. Great. Thank you.

Does the Company methodology bill impact analysis shown here project sales in customer class allocation factors for base rates?

A It does not.

Q Okay.

A Well, it does not -- it does not, but it

does have proposed base rates of anything that has been filed with the Commission at the time of the filing of this.

Q Right.

And in this chart, these base rates -- here, this top line -- they are staying the same over the entire period, correct?

A I mean, will they change as of December 2025? Because we had a base rate change in January '25 and then, yes, they stayed the same after.

Q As depicted on this table, they stay the same?

A Yes, uh-huh.

MR. ZIELINSKI: Okay. That's all. Thanks.

THE WITNESS: Great. Thank you.

COMMISSIONER HUDSON: Any redirect, Dominion?

MS. NIELSEN: No, Your Honor.

COMMISSIONER HUDSON: Thank you very much. You're now excused.

THE WITNESS: Thank you.

MS. LINK: We are happy to report -- the most smiling I've seen in the whole courtroom --

that we have concluded our rebuttal testimony.

COMMISSIONER HUDSON: Thank you.

All right. So that concludes the evidentiary portion of this hearing. The Commission wishes to thank everyone for their participation and professionalism.

In lieu of closing arguments, the Commission would like post-hearing briefs and issues matrices in this case. The Commission would like the post-hearing briefs and issues matrices to be filed on May 18th.

And so before we adjourn, let me ask if my colleagues have any comments from the bench.

COMMISSIONER BAGOT: Thank you, everyone.

One more additional request I'd like to make as an inclusion in your post-hearing briefs or matrices, so recognizing that at the beginning of Dominion's IRP filing, they included a nine-page chart which includes a list of requirements that Dominion must include in their -- each IRP filing; these include Code requirements, guidelines, and then there's also a number of requirements that have been added per Commission -- past Commission order.

So specifically with respect to -- I

believe there's 29 requirements that were included in prior Commission orders, I'd like to ask that to the extent any party or Staff believes that a requirement from a prior Commission order has grown stale through the passage of time, that you address in your post-hearing briefs or issue matrices which of those you believe has gone stale and also to specifically identify or explain why there's good cause for us to remove that requirement going forward.

COMMISSIONER HUDSON: All right. Is there anything further to come before the Commission?

Hearing none, we are adjourned.

(The proceedings adjourned at 5:34 p.m.)

COURT REPORTER'S CERTIFICATE

I, Scott D. Gregg, Registered Professional Reporter, certify that I recorded verbatim by stenotype the proceedings in the captioned cause before the HONORABLE COMMISSIONERS of the State Corporation Commission, Richmond, Virginia, on the 18th day of April 2025.

I further certify that to the best of my knowledge and belief, the foregoing transcript constitutes a true and correct transcript of the said proceedings.

Given under my hand this 21st day of April, 2025, at Norfolk, Virginia.

Scott D. Gregg, RPR

Scott D. Gregg, RPR
Notary Public
Notary Registration No. 215323