PUBLIC SERVICE COMMISSION

OF WEST VIRGINIA

CHARLESTON

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IN RE: NEXTERA ENERGY TRANSMISSION*

MIDATLANTIC, INC. * 26-0075-E-CN

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HEARING TRANSCRIPT

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BEFORE: CHARLOTTE LANE, Chairman

RENEE LARRICK, Commissioner

WILLIAM RANEY, Commissioner

HEARING: Tuesday, October 27, 2026

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P R O C E E D I N G S

CHAIR:

You all may sit down. Okay. Day two of our hearing. Before we get started, we have a couple preliminary matters.

Apparently if we leave our microphones on, the people who are listening live get background noise and they can't hear very well. So when we're not using our microphones, will you please turn them off?

And secondly, I understand that Lake O'Woods and NextEra have reached an agreement about siting. And so would one of you like to make a representation to the Commission?

ATTORNEY CALLAS:

Yes, Your Honor, we made a filing on Friday. I did, on behalf of NextEra and Lake O'Woods with regard to the siting of the proposed route over property that is included in the Lake O'Woods' property.

If the Commission's has followed along on the testimony as between those two parties, basically there was a proposed route by NextEra, a counterproposal by Lake O'Woods. And the parties continued to negotiate even through last week.

They believe that they have an Agreement

in Principle. I can describe it as for a route that kind of goes between those two that would be acceptable to both. It is --- it needs further engineering refinement in order to put it, you know, on a map and file it with this Commission, which we expect to do in conjunction with Lake O'Woods after this hearing.

But it will be an agreed route. Because the parties reached that agreement, they agreed and stipulated to the Commission that neither would cross the other party's witnesses. We were the only ones who had indicated an intent to cross the Lake O'Woods' witnesses, of which there were four.

Because of that, we suggested that the Lake O'Woods' witnesses be permitted to have their testimony adopted without the need to appear in person to sponsor it. They were witnesses who were scheduled to appear on Friday. So that's the --- I think that is the pending request.

CHAIR:

Mr. Magee, do you agree?

ATTORNEY MCGHEE:

I would make one clarification and one addition. The clarification is, and I think this just may be a matter of language. Generally I agree with everything Mr. Callas just said when he made reference to

there had been an initial line posed by NextEra and then a proposed ultimate line from Lake O'Woods and that the Agreement in Principle is something in between there. I don't think it's geographically in between there. I think it's a further distant line, but that there is an agreement for yet a compromised line.

Having said that, the request that I would make on behalf of Lake O'Woods. Since the prefile testimony yesterday was admitted for all parties, including Lake O'Woods, as Mr. Callas noted, the four witnesses from Lake O'Woods are scheduled for Friday this week.

Since NextEra had been the only party to indicate a desire to cross examine those witnesses, and with this agreement, there wouldn't be any party to cross examine them, absent the Commissioners having questions, I would ask for leave of those witnesses to be excused from attending the hearing.

CHAIR:

That may be granted. And with that change then we will attempt, then, to take - to get Monday's witnesses rescheduled to Friday. And we will work on that later on today. Okay. Thank you. Now with that, we return to the Cross Examination of Dr. Abdulsalam.

Okay, Mr. Callas and Ms. Grundmann, would

you please turn off your microphones?

ATTORNEY GRUNDMANN:

Yes, Your Honor. I do have a matter related to the Cross yesterday by Mr. Williamson of Dr. Abdulsalam. We do have available copies of the response by NEET MA to WVEUG 3.7. I believe that was marked yesterday as WVEUG Cross Exhibit 3. And I have copies available to pass out.

CHAIR:

Okay, please pass them out. I don't think I have it.

ATTORNEY GRUNDMANN:

You do not have it, because we only ---. I think we did not have sufficient copies. We used my computer yesterday to show the exhibit to the witness. But I do have copies that can be marked.

CHAIR:

Okay. Thank you.

ATTORNEY CALLAS:

Your Honor, as I sit here and listen to questions of the witness I put on, my practice is to keep my microphone on in case I need to make an objection. I hope you'll accommodate that.

CHAIR:

Well, Mr. Callas, if you're going to keep

your microphone on, then I guess I should keep my microphone on. And everybody else, you have to turn off your microphones and we will see if that solves the problem. Was this Cross Number 3?

ATTORNEY GRUNDMANN:

Yes, ma'am.

CHAIR:

And you want to admit it into the record?

ATTORNEY GRUNDMANN:

To the extent Mr. Williamson did not do so yet yesterday, yes, we would propose to move it into the record.

CHAIR:

Okay. It may be admitted into the record. Now, were there Interveners who wish to cross examine Dr. Abdulsalam? Yes, sir. Please come up to the table with a microphone. And please identify yourself.

MR. HUNTER:

Thank you, Chairman Lane. Thank you, Commissioners. Good morning, Dr. Abdulsalam. My name is Kent Hunter and I'm one of the Interveners from Monongalia County, which is in regards to your analogy of the interstates between the exit ramps or the substations in a manner such that we probably won't have any local direct benefit from it.

I do understand your analogy might be express lanes, so to speak. Meanwhile, we have the transmission lines and the local direct electric lines that could be considered the original interstate or the old interstate, which -. And you spoke yesterday a little bit about safety and reliability.

That's where my question is going.

DR. SAMI ABDULSALAM, HAVING BEEN PREVIOUSLY SWORN, RECALLED AND TESTIFIED AS FOLLOWS:

CROSS EXAMINATION

BY MR. HUNTER:

Q. With regards to the safety and reliability of the old interstate, the old transmission lines, in this area where I live, I'm aware of downed electric lines which have energized the earth. The same line came down a separate time, electrocuted cattle.

A line --- a transmission line within a half a mile came down, started a brush fire, all within the span of a couple of years, not due to a storm.

And we talked yesterday about a fellow who thinks he may end up being 41 feet from the right of way. And the question was posed to one of the NextEra representatives if they felt comfortable living there and they said they

would feel comfortable living there.

So could you please discuss what the --- what the requirement to --- the requirement for and the commitment to the maintenance of the PJM grid that is designed and managed by PJM?

Because if we're building a new interstate and we have an old interstate that isn't being maintained, it's potential that the new interstate could not be maintained either in a safe and effective manner. So could you please discuss maintenance and requiring and committing to maintenance of the current lines, let alone the new lines?

A. Good morning Mr. Hunter. So I'm a planner, I'm not a right-of-way expert. I'm not the transmission line design expert. And I think your question would be best directed to the transmission line design experts for the transmission proposing entity which is in this case NextEra.

But I would say the following. A newer transmission line, through its vantage and advancement in material and construction methods should represent a higher level of operational resilience compared to something that was potentially designed 40, 60 years ago. So that's on at face value.

That doesn't mean that any piece of equipment that

gets installed should not be up to --- up to bar, or up to the standard that ensures the safety and the reliability of the grid. And that's why any transmission owner who develops any transmission equipment with a PJM is held to a specific operational reliability and resilience standard based on which they collect some of the rate case that they would like to go on basis. I will just keep and get my response to that and I encourage you to check with the State ---.

Q. Okay. That sounds fair. I also think that if the longevity of this transmission line MARL, should it be approved, is to be 40 plus years, 40-some years, the current lines, the old interstate that I'm talking about, the local lanes is about that age, if not a little older. So you know, there needs to be some oversight on not just putting new lines in place and saying, okay, well we gave you the bid, you won the bid, now, keep it up.

There needs to be some oversight, because as I understand it, PJM is in charge of this grid. And if we're talking about reliability, one way to maybe maintain reliability, and then certainly the subsequent safety that goes along with unreliable lines would be your responsibility --- your --- PJM's.

A. As I clarified, Mr. Hunter, PJM is responsible for operating the grid and planning the grid and

administering the market. But we do not delve into the specifications, detailed design or the upkeep of the grid. That is the responsibility of the transmission owner before the State Commission locally, and before the federal regulating individual.

They cover how well and they can decide how well or not a specific deal or transmission owner is --- is complying with those requirements.

MR. HUNTER:

Thank you for your time.

CHAIR:

Are there other Interveners?

MS. GRUBER:

Yes, ma'am.

MS. GRUBER:

I'd like to ask him some questions, please. My name is Kristi Gruber.

CROSS EXAMINATION

BY MS. GRUBER:

Q. And from what I know about electricity, it only goes one way; right?

CHAIR:

Okay. So Ms. Gruber, could you also turn up your volume and maybe get closer to your microphone?

MS. GRUBER:

I'm up as far as I can ---. I'm sorry, I don't have much of a voice.

CHAIR:

That's much better now.

MS. GRUBER:

Okay.

BY MS. GRUBER:

Q. I was just talking about --- from what I know about electricity, it can only go one way. And it's --- it's not like your lines are not like a sonic ring, where if it hits an obstruction, it goes and finds another route to get to the same place.

So if it only goes one way and the transmission lines are driving the electricity from Pennsylvania to Maryland to Virginia, and you said you need a substation for distribution and West Virginia has no substations on the MARL line; s that correct?

A. Inside the West Virginia State lines, I believe that there are no intermediate substations proposed, other than ---.

Q. And so ---?

A. If I may finish, Ms. Kruger, other than the termination of the line into the existing Black Oak sub, we don't --- we are not proposing any new substations inside West Virginia.

Q. Okay. Thank you. Mr. Collin (sic) indicated that we need this MARL line in West Virginia to prevent collapse of these lines, all the old lines and things which he said, his testimony was that happens every 10 to 20 years. In which case we are --- we West Virginians are out of service for two to three days. So if there's no distribution available to us in our state and the power is only going one way, how is it that we are benefiting? Like you said, you can prevent a collapse by putting this MARL line, and yet we have no distribution. So how does that prevent a collapse in West Virginia?

A. Yeah. So Ms. Gruber, hopefully PJM will never allow an extreme condition like that to materialize. But the example provided was that this --- it was describing the potential exposure to the risk of a collapse if the expansion doesn't happen if the new transmission line that MARL is part of does not get constructed.

But if the line is constructed, the outage of any of the existing infrastructure facilities will not cause or lead to the catastrophic failure that you are referring to in your comment.

Q. I'm still not understanding how that --- how that ---. So we're back to the highway example again. Because you're running on the big highway. The little highways have less traffic; is that correct?

A. That's correct.
Q. Okay.
A. Now if I may to assist you and others understand using the analogy or make it easier to understand. Using the highway analogy, if the highway is currently congested, everyone is congested, interstate traffic is congested and congestion occurs on the line itself supplying the local communities.

Now if a parallel interstate highway is built, it will reduce the flow on the original interstate highway and in the local traffic so that the outage of the major interstate does not drive the flow to go through the local township roads and overloading them and overloading that infrastructure. It would, rather, go to the new line, instead of delving and seeping through the subtransmission system that I'm assuming you are referring to by the distribution substations.

So again, to summarize that the new line will prevent the catastrophic failure from happening by ensuring that there is enough capacity under the loss of any single element instead of driving all that flow through the 500 kV network, which is the major interstate lines or roads, plus the township roads, because the high-capacity lines might not be able to carry the entirety of the flow.

Q. I appreciate that. Thank you, sir.

So my other question is, you had said we're already behind the eight ball. So what you have currently designed in 2023 is already essentially not what we need in 2026 ---.

ATTORNEY CALLAS:

Object to the form.

BY MS. GRUBER:

Q. This is not going to be built until ---.

ATTORNEY CALLAS:

I'm sorry, I object to the form. That mischaracterizes testimony.

MS. GRUBER:

Okay. Did he not say that? Can I finish my question? You can tell me if it's a legitimate question.

BY MS. GRUBER:

Q. So we're already behind in the eight ball here, is it ---? What happens then ---? So we're building --- We're building a line that's coming through West Virginia and it's not going to be what's needed in 2027, 2028. Is there going to be a supplemental line that needs --- do we need to build like a third highway in 2030 or 2031?

I'm just trying to understand what the --- what is the --- how much ---. This is obviously not the full

capacity that we're going to need, because it was designed in 2023. And now, 2026, the load is different and it's going to be different by the time we finish this line. So we're going to put --- is there going to be another line?

And I asked this question because as the land people come --- and I know I need to ask this to the land people when they get up --- but they were talking about my row having to go from 200 feet to 750 feet.

So my question is, are we going to see a third line coming through here in 2023 or from 2032 or whatever? Are we going to continue having this --- these little right of ways growing and growing or is there an intention to build great big towers that can be --- can be added --- lines can be added, like you were talking about yesterday?

You said you can pile the lines up on top and grow the lines upward. So I'm just trying to understand how much land we'll be losing in the long run. Is that not an allowed question? I mean, that's fine if --- I just want --- I'm just trying to understand.

ATTORNEY CALLAS:

There's a lot in that question, but I suspect at least some of it Dr. Abdulsalam can respond to.

A. Thank you. Thank you, Ms. Gruber. So let me cover your questions in order. I will start with a correction. When I say is that we are behind eight ball does not mean that the solution is invalid or we need a different solution. This means that the need for the solution is materializing earlier, because we started to see constraints on our system as early as last winter. This is what I said. So I hope that point is clear. The need has been established and the solution through which that need is going to be addressed, that MARL is a part of it, is a genuine part of it.

And to your question about, is that the end of development in West Virginia? I think it's public knowledge that PJM continuously keeps an eye on the needs and the pulse of the grid. And part of our Rebuttal Testimony, part of this docket, we already mentioned that PJM, part of the 2024 Window 1, seeing that continuous need for growth, have proposed an additional much larger 765 kV line that's not part of this proceeding. It will be part of a separate standalone proceeding.

But we have proven that the need is going to be there for both lines. I cannot say for sure now that additional 765 kV line will show up adjacent to the MARL line. That would be topic of that CPCN construction application. But to be truthful and transparent with

you, yes, we have a plan for one additional 765 line that will go through West Virginia and one additional 765 line that will be further south purely inside Virginia. And those two will be part of a future CPCN application. Thank you.

Q. Thank you, sir. I just had one other question. What did I do ---? I'm sorry, I've lost it here. Never mind. I think I'm good. I appreciate you with your transparency.

MS. GRUBER:

I appreciate that. Thank you, sir. Okay. That's all I have.

CHAIR:

All right. Next Intervener please.

MR. HOCKMAN:

Good morning, Chairman Lane, Commissioners. Good morning, Dr. Abdulsalam.

CROSS EXAMINATION

BY MR. HOCKMAN:

Q. I'm Bryan Hockman from Hampshire County. I've attended quite a few of the monthly TEAC meetings. So it's - it's good to finally put a face to your voice.

A. Thank you.

Q. Yeah. So we talked about a lot of different things yesterday, as far as examples and analogies. And one of

them was a good one from, from Ryan Colley about the water pressure, you know. And I use that a lot when I'm trying to explain to people about the distribution system and how it works. And you know, and it's - that is - our grid is losing pressure.

You know, so we learned yesterday that overloaded --- we have an overload pressure potential on our grid and it's due to load demand primarily outside of West Virginia. You agree to that?

A. The net load demand is primarily located outside of West Virginia.

Q. Right. Okay. Yeah. So in the year and a half that I've been attending these meetings for --- you know, trying to keep up with the MARL line, I've noticed that, you know, the agenda items, I mean, there's an extraordinary amount of load demands noted in multiple agendas. You've seen that; right?

A. Yeah.

Q. And whenever we see a large megawatt demands, some of them are large enough to power small or mid-sized cities, we pretty much know what they're for. Right? It's for data centers. Correct?

A. Mr. Gledhill can speak to the details, but a good portion that drives the load increases that AI load ---.

Q. Yeah. So, you know, and I haven't seen, you know, with the exception of the last couple of months on the agenda items that --- none of that load demand seems to be coming out of West Virginia. Do you agree with that?
A. Just driving here ---. And I --- I would think that's subject to check, a resident of West Virginia told me that there is a big massive data center establishment that's being constructed.
Q. Right. Like I say, the last couple of months, I think September, October, they mentioned those. And I hadn't seen any of that in the year and a half. I've seen all the other areas and stuff, but ---.
A. I cannot confirm with a hundred percent certainty that West Virginia has zero data center --- I cannot say that.
Q. Right, right. Yeah. And I guess, you know, a lot of that's what's --- what's tripping us up is the reason why we're all here is because power is currently needed in the east. And you know, West Virginia just kind of seems to be in the way here.

So can you tell us and give us any kind of an estimate, you know, out of PJM's 13 state network in the D.C. area, just about what percentage of the load demand is currently coming out of this state for all this stuff?
A. I would like to defer this to the expert on the

topic, Mr. Andrew Gledhill, and he will be showing up on the stand immediately after me. And you can pass the question.

Q. Okay. We talked a little bit yesterday and I talked to Mr. Colley about the Black Oak Substation and I know there was a little confusion about that because it is noted that --- that PJM is going to bypass that station. Now that's just a technical term in the transmission world. Doesn't mean we're going to go over it, it just means we're going to loop around it. And if you want to use your interstate terminology or analogy, it's basically a bypass over the city, you know, kind of.

And so basically it's going to let the traffic or the voltage and current go to where it wants to go. And in this case it's going to go to the east. So it's not a termination point like the Gore Substation would be. So it's just a loop around. Correct?

A. I think we are mixing two things here, Mr. Hockman. The first thing is that MARL is terminating currently at Black Oak. When the project was first approved, we decided to defer that termination. It was part of the original. And PJM said, let's defer that definition for now, because it seems like we may be able to get by in a subsequent window. This was 2022 Window 3.

In 2024 Window 1, where we have identified the need

for additional lines, we observed overloads on the 138 kV system, which what you call is the subtransmission of the distribution system or the sub network that takes the main --- that bulk power from the 500 kV and brings it closer to where it's going to be utilized.

We started to see overloads of that 138 new system because of the issues that I was trying to explain earlier for the stakeholder on the phone. That when you get an outage on the 500 kV, if you don't have enough backbone capacity, that flow will tend to go and seep into the 138, the smaller township roads and county roads.

In order for us to prevent that, we introduced a diversion, one additional diversion by clearing up more of the 500 kV to let the load consume the power as it flies by instead of going further out and coming back to supply a township or a city after it passes it. So that's the need for the Black Oak termination and that's how it transpired. And we understand that the details could be confusing with a normal stakeholder, but Black Oak is part of the model scope. We brought it back.

It was proposed by a competitive proposal to enhance the performance of the kV system and clear up more transfer capability ---.

Q. Right. Yeah. And you know, I have an archived map

of the MARL line that didn't touch that. It either went north or south, I can't remember. And then I think in June of 2025 I noticed that you guys had moved that.

But the reason you gave for doing that was for the voltage violation that you saw in the MARL line between 502 Junction and Gore. The voltage drop that it was actually there to enhance that voltage. Yeah, more so it didn't say anything about a lot of what you just said. It was more about, you know, juicing up the line before it got to Virginia, so ---.

A. Voltage collapse conditions, or sometimes we refer to them as voltage drop, they are usually characterized as a voltage collapse because how fast it drops. But it's normally accompanied also with lots of violations on the transmission system. So overloads or carrying more than what the physical ability of the line to carry is usually in our technical technology called the voltage collapse condition. But it is accompanied with the inability of the infrastructure to carry the load. And of course I'm trying to simplify for the overall good here.

Q. Okay. Yeah. And so the other thing that I wanted to talk a little bit about, I'm not going to get into this much, is just the confusion that everybody has again about between transmission and distribution, you know.

And that's been a big problem, trying to explain this to people.

For instance, I have a neighbor who lives west of me and he was actually very tickled at the MARL lines coming through because he said he started losing power all the time. And I never --- I've lived in my house for 35 years. I hardly ever lose power. And I tried to explain to him, I said, you know, that's got something to do with your ---. We're both on the same grid, right, but we're not on the same distribution system.

And you know, that's --- I think what bothers me the most is that some of these utilities are utilizing that to the people and say, oh, yeah, this is going to keep your --- keep your lights on. And in a situation like that, it's --- it's not really ---. That's --- to me, that's not really true.

Do you see that happening with these utilities? That they --- they see that and they think, okay, we're going to run with this?

A. Mr. Hockman, let me assure you that the only entity that has oversight on the planning needs of this grid is PJM. The transmission owners for regional needs and public regional needs that PJM identifies, PJM only can identify them, assign them and ensure that they are the more efficient for effective solutions. So if you are

talking about MARL, that's a PJM name, that's a PJM call. It's not the project proponent.

The project proponent is only responsible for the cost, only responsible for getting the lines energized, as per the requirements of the PJM, and as close as possible to the need. I hope that provides you some assurance. I can't speak to what you are hearing from the community, but PJM is responsible for planning the regional transmission grid ---.

MR. HOCKMAN:

Okay. All right. That's all I have. I appreciate it. Thank you.

CHAIR:

Are there other Intervener ---. Are there other Interveners who wish to question this witness.

If not, Commissioner Larrick?

COMMISSIONER LARRICK:

I have no questions.

CHAIR:

Commissioner Raney.

COMMISSIONER RANEY:

Yes, ma'am. Good morning, Dr. Abdulsalam. I've been practicing that, so I don't screw it up.

A. Good morning, sir.

COMMISSIONER RANEY:

Good morning. You just answered Ms. Gruber that there may be an additional line. Why are we only doing a 500 kV here and not a 765?

A. Great question. And as we demonstrated in our testimony, we actually need both. There is --- so we --- we justified in the Rebuttal that the 765 will not replace the need for the 500 kV.

Originally, and as you may be very well aware, in the original window, in the 2022 Window 3, there was four or five 500 kV proposals that are very similar to MARL. But MARL had an edge because of the merit that it has by going one step further and terminating inside Northern Virginia.

But all of the 500 kV solutions had very similar starting points in West Virginia and very similar endpoints either inside Northern Virginia or just ahead of that or north of that at the Dobbs or area corridor. Also we had one 765 kV proposal at the time that was planning to introduce 765 kV development for the first time since a very long time in PJM, from Joshua Falls.

Indeed we did not decide to take that project as an initial solution inside 2023 for multiple reasons. Number one, at that time the need was addressed by the MARL project. And at that time MARL also, when we did the evaluation, it did offer almost 50 percent

utilization of existing right of way. The 765 was greenfield a hundred percent and still is.

And from an execution risk perspective, we saw the imminence of the need and we were very afraid to rely on 100 percent greenfield solution to start with that we will be missing the mark by a very long time through either the CPCN process or through the construction. So we decided to start walking before running, if you may say, and putting in the 500 kV solution. And then as needs continue to arise, either adjust the need or we will complement it.

What has been proven, through a consecutive window, 2024 Window 1, that we need both of them. We need the 765 kV development and we need the 500 kV development.

COMMISSIONER RANEY:

So do I understand that you chose the 500 because you thought it was more likely to be approved, not because of electricity needs but because of political and community needs?

A. I'm afraid that this is not what I say. I say what I said was that we thought that it will be facing less amount of risk compared to a hundred percent greenfield. But we wanted wholeheartedly believe and hope that we will get these needs approved either way because the system really needs it.

COMMISSIONER RANEY:

So we can anticipate a 765 line coming along here?

A. We already have done the record sir. It's part of our plan and the transmission owners are already working on the CPCN.

COMMISSIONER RANEY:

I think one of our big problems, at least I know from my perspective, we can't see electricity.

A. That's true.

COMMISSIONER RANEY:

So we can't see it all kind of up here on your interstates ---.

A. And that's part of the issue. Electricity is there, it provides lots of value. You only appreciate it in one condition, once it's not there, once you lose it.

COMMISSIONER RANEY:

And I get to the point where I think I'm beginning to really understand all of this stuff. Then I take a step back. And you started that yesterday with your on and off ramps with the interstate. Help me out to understand, because we don't have any on and off ramps with MARL in West Virginia. If I'm going to get on, I got to get on to Virginia or I got to get on in Pennsylvania?

A. That's true.

COMMISSIONER RANEY:

So does Fort Martin need to send all their electricity to 502 in Pennsylvania in order to get on the MARL line to run back through West Virginia?

A. So of course, as Mr. Colley tried to explain, the 500 kV backbone, although you may see some geographic separation between the nodes, electrically they might be very, very close. So electrically, Fort Martin and the 502 Junction --- you might see some distance separating them. But electrically they can behave as a very similar node.

You can assume that whatever is west of MARL and west of the Black Oak line and the Mount Storm 500 kV line, there are currently four 500 kV lines running west-east, as you may know. All of these lines share a very similar node to the west. That whatever reaches the that node from the west rides on the four existing lines to reach where the load is or where the net demand for electricity is.

COMMISSIONER RANEY:

In Virginia?

A. Throughout. Now, having a substation in Virginia or in Maryland, just few miles away, but that substation has transmission lines that run hundreds of miles at the 138

kV level to supply counties and cities in Virginia or in Maryland or in West Virginia.

That doesn't stay there. It continues to flow downstream to supply your load inside West Virginia. Because the 138 kV system is interconnected, it just gets supplied from upstream because of the imaginary boundaries of the states. So Black Oak might not --- might be in West Virginia, might not be in West Virginia, but the substation itself is carrying flow into the 138 to serve the entirety of the load that serves the Black Okay 138 system. That doesn't mean that West Virginia is not utilizing the line.

COMMISSIONER RANEY:

I'll continue to struggle with it and try to sort it out in my mind. How was all this done before PJM ever existed?

A. It was --- it was done at a different --- at a different time and it was done properly. The same way that we are doing it now, but just different heads and different responsible organizations were responsible.

Now, having said that, the industry might have changed and how we do and conduct business might have changed, but if you look at how the system is developing, it's very consistent. It's quite consistent, especially when we are talking about the needs for transferring

power from Western PJM ---. And when we say the west here, I don't want the stakeholders, including Your Honor and the rest of the Commissioners.

It's not necessarily that the surplus power is coming from West Virginia, it's coming from the totality of the Western PJM interconnection. So whatever is surplus out of AB, out of Ohio, out of --- out of Kentucky, all of that power comes through, passes by West Virginia, passes by Ohio, and then has to ride on that backbone infrastructure that's currently formed by 5 or --- 500 kV lines to reach the mid-Atlantic in southern PJM.

As I mentioned yesterday, before the economic downturn in 2008, PJM has been working very hard on reinforcing that PATH. And we successfully got through. We could not get the PATH project through because load tanked at the time, but here we are again, that the need to enforce the same backbone is arising no matter who's doing the job at the time. So the 500 kV corridor has been established long time ago before maybe even PJM existed.

And let me also bring a very important point to the Commission's attention. In the 2022 Window 3, we ran the transmission solicitation process, which is competitive and transparent. There were five total proposals

submitted in that window by different entities. All of them agreed, without coordination, that 500 line needs --- one or two needs to be built from somewhere in West Virginia to somewhere in the mid-Atlantic, either in Maryland or in Northern Virginia.

And it's just minor separation in nature between them. FirstEnergy proposed a couple of 500 kV projects. A single-circuit 500 kV, double-circuit 500kV, and two single 500s. LS Power is also another nonincumbent competitive transmission developer and they proposed a very similar development to what's being proposed by MARL. But MARL's proposal just got an edge. So there is consistency regardless of who's wearing the hat at or who's doing the job, because it should prevail at the end of the day.

COMMISSIONER RANEY:

All right. If you will bear with me as I go through a couple of these questions that I've asked, I think, earlier witnesses. But if the cost is not approved for recovery here in West Virginia, will the line be built?

A. I'm not a lawyer or a regulatory expert, but I believe the cost allocation, not recovery is --- is under the provision of FERC. But if I may understand your question in a different manner that if for whatever

reason MARL or any other project has to change, we will adopt.

But our question is why? If it is proven that it is the more efficient or cost-effective solution ---. It's very unlikely that you can get any infrastructure project without impacts. There will be an impact. And if the need is there and it's proven and it's materializing and many developers have proposed very similar development sequence of the solution, it will be very difficult for us to envision, if the Commission's acting in the public interest, would say no.

COMMISSIONER RANEY:

I understand that no matter what the State of West Virginia does, the rate impact is determined by FERC.

A. The cost allocation, yes. The cost allocation is a fair jurisdictional matter and my Counsel here can correct me, if not, if I'm wrong.

COMMISSIONER RANEY:

The allocation is determined by FERC. How about the amount?

A. The allocation means who has to pay the check for recovery, but it does not say how it's get --- how it gets collected. I think the recovery has that the local states has a role in accepting and dictating how the

recovery is going to come from. To make up the cost allocation fees that FERC has decided each zone has to be ---.

COMMISSIONER RANEY:

Similarly along that line, and I've asked this earlier, too, not of you but of other witnesses. If Woodside should happen not to be approved, what happens tomorrow?

A. There's going to be a major problem and we will have to develop Woodside at a different position. We need Woodside. MARL and the system needs Woodside, not for MARL, but as you can see, if you take a look at the transmission line that spans 200 plus miles, that's a very long distance. So you will need a substation, at least one or two in the middle, to ensure that you are keeping an acceptable voltage profile as you are shipping the power from one end to another.

That's the purpose of Woodside, the prime --- one of the primary purposes of Woodside. If the location of Woodside needs to change and I think my --- other witnesses --- Mr. Colley mentioned ---. I don't recall if Ms. --- Kaitlin also mentioned that. But if the location of the substation has to change, we will have to develop another substation, but the need will not change.

COMMISSIONER RANEY:

And that's --- the approval of Woodside is ---?

A. It's in the process.

COMMISSIONER RANEY:

It's in the process ---?

A. I believe so, sir.

COMMISSIONER RANEY:

I asked Mr. Colley about --- I'll probably never find that again. But about the stakeholders that were involved with PJM. And can you tell me more specifically who those stakeholders might be?

And what I'm most curious about is who might be a public stakeholder or is this all internal football? Is it all played inside the boundaries?

A. So in PJM, we are required, through our governing documents, to conduct specific steps as we are conducting our planning responsibility. Part of that or a major part of that is the execution and administering of the Regional Transmission Expansion Plan on an annual basis.

We are required, on a monthly basis or on a frequent basis, to conduct a meeting describing how we progress through the process every year, that starts at the end of the previous year or the very beginning of the fiscal year of --- of the annual year in January or February to conduct an assumptions meeting.

And then we discuss the scope of what's going to happen with the Regional Transmission Expansion Plan, the schedule of the plan, when are we going to open the window, et cetera, et cetera. Now these meetings are open to public. And by public I mean everyone who has a stake, everyone who has an interest in attending, starting from PJM members, like generator owners, transmission owners, LSEs, generators load, even end-use loads. They are members and they can --- they can attend. Landowners can attend, property owners can attend, interested individuals can attend, media can attend.

We invite States and State organizations and federal organizations to participate as well and they do frequently attend. I think I heard from one of the --- that honestly that he has been a regular, he has attended a good chunk of the TEAC meetings.

The purpose of that --- and although I did hear the Commission ask if these stakeholders have a say or vote or an opinion that is binding to begin. I think in today's time and age the transparency and having opinions expressed on the record carry a huge value and weight. No voice is silenced. It's all on the record, it's all documented. And any stakeholder can ask the transmission owner or PJM any questions they may have. And that in

itself carries lots of value.

COMMISSIONER RANEY:

Well, I hope that's a very active part of everything. Sounds like it is.

A. Yes.

COMMISSIONER RANEY:

Hopefully that will continue. I talked to Mr. Auville yesterday about the load forecast. And I think he mentioned Prince William Data Center, a couple of alternatives. Is the ultimate decision about MARL going to depend on this load forecast that we have today and not be changed in any way from the time a shovel goes into the ground? Or are we going to be dealing with an outdated forecast when you begin to move the equipment in to build more?

A. Thank you for giving us an opportunity to explain. PJM does not have a dog in this case, so we are not benefiting from building.

COMMISSIONER RANEY:

Don't you do the forecasting?

A. We do the forecasting.

COMMISSIONER RANEY:

Isn't that the basis of this whole thing?

A. It is one of the factors, yes, sir.

COMMISSIONER RANEY:

So you do have a dog in the fight. Might not be a big dog, but you got a dog.

A. We may take care of the dog, but we are not the owners of the dog.

COMMISSIONER RANEY:

I'm feeling well trained in the health program.

A. So if I may explain. What I meant is that one of the strong drivers of this project, as well as many of the projects inside the transmission plan hinges and is underpinned by forecast. If a material change to the forecast transpires, PJM will automatically and is obliged to take a look at the needs and either decide to maintain them and clarify why, adjust them or cancel components or cancel all of it.

And this is not new to PJM. PJM has done that before, as I explained multiple times. PATH is one example. 98 East is another example. On our own we had to cancel it because spending the public ---. We take this very, very seriously. Like impacting people's lives, people land that has been in the family for decades, we don't take that light. It's a major and heavy responsibility. And we carry that responsibility with pride.

So if the forecast materially changes again, PJM

would look at what next steps needs to be --- needs to happen. Now in MARL's case the forecast has to go down significantly for the need to change, because it's not only MARL, as I explained, we are planning two additional 765 lines. Not --- not both of them will happen in Cypress, Virginia, but one of them will happen in the north connecting Amos towards again the Dobbs Corridor and another line that will go from Joshua Falls to the heart of the State of Virginia. And we are expecting those CPCNs to start take place or the proceedings to start take place within a year or so.

COMMISSIONER RANEY:

Get into your Direct Testimony. And on page seven of your Direct Testimony lines --- beginning of lines 12 running down through 15. And this is all talking about, I guess, how many people were involved in that initial ---.

A. Pardon me, Commissioner Raney, is it page seven of my testimony?

COMMISSIONER RANEY:

Page seven of your Direct Testimony?

A. Yes, I --- I can see that this provides a list of the components of MARL.

COMMISSIONER RANEY:

Yeah. And it was explained yesterday in

an understandable form as to how this all goes. And I'm a little surprised that PJM went literally --- the initial bid was out for someone to give you a plan. And I'm a little surprised that you all didn't have a plan and have it bid on, say here's the plan. PJM now come build ---. Is this the typical way things happen?
A. Yes, sir. And if you would allow me, I can explain a little bit more. Out of Third Order 1000 Compliance, there were multiple or two main paths towards compliance. One of them is a sponsorship model. Meaning that PJM will act or the RTO or independent system operator will act totally unbiased towards the type of technology, towards the nature of the solution. And it will just be very transparent about the needs and let the transmission owners or interested transmission developers put not only the brains within the walls and boundaries of PJM but industry towards the problem and come up with ideas that would be unique and competing to address those needs. The intent was to enhance the efficiency.

This is called the sponsorship model where the RTO only identifies the problems and looks for unique and innovative, cost-efficient and effective solutions from the industry to come back from project developers who are interested, the participants. That is --- that is our model here.

And when you follow a model like that and you end up you have a specific need and you end up with five or ten proposals, all of them are kind of asking to build a very similar development that in itself has value. It says that it seems like the most efficient way to address a need like this, regardless whom you ask is going to be building a line from Area A to Area B around this similar route. Which is --- which is, again, transpiring very clearly part of this proceeding.

COMMISSIONER RANEY:

Okay. Do you have MARL or NextEra, it's not only providing you a plan but also they will construct it with their intent and wish to do that?

A. Correct.

COMMISSIONER RANEY:

You have companies that will provide you only the plan and would not be the ultimate constructor?

A. There are options and these options are currently being executed, due to the size of developments that are required, for a joint venture to collaborate that could be comprised of multiple developers. They can come together to join --- to form a joint venture, so that they can execute the project more efficiently.

Some companies can decide to have design roles and companies may design --- set up an operating role or all

of them will share the responsibilities across the types of engineering and construction and planning responsibilities. So we can have the best of both.

COMMISSIONER RANEY:

Okay. Did you have both?

A. So the proposal has to be submitted to PJM as a complete proposal. Like someone cannot just come in with an idea. Because if someone --- if we open it for folks to come in with just ideas and they are not going to be responsible for constructing it, maybe it's not constructible.

So the package has to be complete. And that's why PJM will have to provide a Designated Entity Agreement that will be signed by the proposing entity as well as PJM, for them to accept for project pro bono to accept responsibility, construct the project as assigned within the time frame back to PJM.

But we cannot just accept an idea. It has to be a full package. It's an idea. Tell us how much is it going to cost, tell us how well you are qualified to execute it and how you are going to construct them by when it has to be a full package. But multiple collaborating entities can join forces to develop such a proposal.

COMMISSIONER RANEY:

So you want folks who are going to walk where they talk, ---

A. Exactly.

COMMISSIONER RANEY:

--- not just talk?

A. They need to put their ---.

COMMISSIONER RANEY:

Yes. I think many of these things --- bear with me while I go through some things here have been answered by Chairman's questions.

There's an awful lot of reference in your Direct Testimony as it relates to problems in Virginia and Maryland, the Baltimore area. And I presume that the real underpinning of this thing has been mentioned by Mr. Hoffman and others is the need in Virginia and east of Virginia for this additional power. Is that accurate?

A. They carry --- so the load growth, which is reasonably large inside Virginia, and to a second level inside Maryland because the Dobbs area is within Maryland, are associated with data center loads.

Please also let's not forget that the net imports or the net flows west to east will also be strongly influenced by the amount of retirements. They have very similar impact.

COMMISSIONER RANEY:

You --- on your page 69 and 70 of your Direct Testimony, you talk about FirstEnergy proposals, and those are just simply alternative proposals to tomorrow.

A. Yes, sir. And they are graphically shown on Map 8. And you can see that they are kind of starting from the same general area and ending at the same general area, with the exception of Joshua Falls --- that is shown at the very bottom of it, if I'm not mistaken.

COMMISSIONER RANEY:

I've got a couple questions about your Rebuttal Testimony. And go to page two of your Rebuttal Testimony.

A. Yes, sir.

COMMISSIONER RANEY:

That's --- that would be on lines 15 to 20. You talk about subsequently approved facilities.

A. Yeah.

COMMISSIONER RANEY:

What's that mean?

A. That's primarily referring to the two major 765 lines 765 kV lines, that I explained in response to the online comment from Ms. Gruber, and that we talked about it right now.

That in a consequent window, namely the 2024 Window

1, PJM identified that there's a continuous need for more west-east flows. And we picked those two 765 kV lines from that window to supplement the need for MARL, and to put a good end to continuously add one line after another and just address this for the foreseeable future.

COMMISSIONER RANEY:

So we're talking about things that will be approved after MARL. On page 23, lines one through six, you talk about Mr. Egnatoff's lack of analysis supporting the conclusion that he draws. But there's also the reverse of that. There's no proof that it will result in less data centers, is it?

Q. Yeah. So I think, with all due respect to Mr. Egnatoff's testimony, I think for someone who has been far from conducting the analysis, he doesn't have a close pulse of what the system needs, how the system is performing, the current conditions in two or three years and then five and ten years.

It may appear that, oh, MARL was picked part of a window and there was a choice between a 500 kV and 765. And then a couple of years later PJM picked the 765 line. Then maybe that 765 should obviate the need for the earlier 500 kV.

I this is how I anticipated that Mr. Egnatoff might have come to that conclusion. And that's why we added in

this Rebuttal, in my Rebuttal Testimony analysis, that demonstrates that not only the new 765 lines, two of them are required, but also without MARL, we will be losing great value that MARL offers on its own. So the need is going to be for the three lines, one 500 kV and two 765s as soon as possible.

COMMISSIONER RANEY:

We deal with PJM all the time here. Perhaps not physically, but mentally we wrestle with it. And I hope everyone at Valley Forge understands that you're asking us as well as the other three states, which I certainly can't speak for, to take folks' property, raise their rates, affect their property taxes with --- questionable is probably not the right word, but an eluding forecast and the basis of it, and it changes from individual to individual.

And no one backs away from a difficult decision, but I hope everyone grasps the fact that, you know, trying to do as much as you can to preserve everyone's property rights and their interest in that and at the same time to try to address the need to get this invisible commodity electricity move through lines that we can't see where it gets gobbed up. So it's a difficult thing.

I appreciate your answers, appreciate your

transparency, the time that you spent here and I wish you good luck at PJM.

A. Thank you sir. Thank you very much.

COMMISSIONER RANEY:

Thank you.

A. And thanks for the opportunity that the Commission has given us to walk through our needs and clarify any questions for the stakeholders or the Commission.

CHAIR:

I want to go back to one of the questions that Commissioner Raney asked. And it's about the stakeholder process. And you outlined everybody that got a say-so in the process. Who has the vote on who --- on what is actually done?

A. So to directly answer your question, Madam Chairman, the PJM Board has the final say.

CHAIR:

And if I said, and I probably shouldn't say this, the PJM Board doesn't pay any attention to the States ---?

A. If I may explain, as I clarified to Commissioner Raney, in such regulatory environment and open space for communication that we have today, if a State objects to an assumption when we are going through this lengthy process of planning transmission, or if PJM ignores

feedback, from the State or from a State agency or from federal agency or from landowners or from developers, that's on the record, it will not help the project progress further.

So PJM has to have all of its work that backs what it's proposing. Because if we don't do that at the front end of the process, we will have to deal with very difficult consequences later on. So we do not take that lightly. And at the end of the day, Madam Chairman, as you very well know, we operate within the bounds of our governing documents and cooperating agreement that's approved by FERC. We cannot stray outside of that --- of that limit. We operate within the limits.

CHAIR:

As I understand --- understood your testimony, you are saying that in addition to the MARL line, we already need another line or two lines. The 765 kV line; correct?

A. Yes.

CHAIR:

And is one of those the Valley Lake line that's proposed to go from John Amos up through the middle of the state and then over to Virginia, I think?

A. Yeah, to the Dobbs' area. Very, very similar corridor that's being proposed under the 500 kV options

that we have been discussing.

CHAIR:

And where is the second kV --- 765 kV line proposed?

A. It was in my Direct Testimony shown on ---. It goes from an existing 765 kV substation that I believe is very close to the Virginia-West Virginia border, further south. And then it heads east and then north to Central Virginia. The line, to my understanding, is a hundred percent going to be residing inside the State of Virginia, that second line, the Southern 765.

But the Northern 765 is going to be heading from the Amos facility of --- by somewhere central in the middle between that Amos plant and the Dobbs' area. That substation is called Welton Springs. And we will be needing both ones. We will need the Northern 765 and the Southern 765 in one shot.

CHAIR:

And did I understand you to say that the Southern 765 is mostly in Virginia?

A. Yes, ma'am.

CHAIR:

I understand that you're an electrical engineer; correct?

A. I am.

CHAIR:

Can you put a 500 kV line and a 760 kV line on the same tower?

A. Physically it's doable, but it's not going to be very wise of me. You will not be happy with me later on. It's not good practice. It could be done, physically, if we are prepared for it, but it would be too much eggs in one basket. Would you like me to elaborate further?

CHAIR:

You mean --- meaning if one of the towers goes down, both lines go down?

A. If a tower that carries both circuits down --- goes down, you don't lose only the 765 or the 500, you lose both of them. So you will have to book space or room on the existing or underlying system to be able to carry that contingency. And --- and 765 is a line that can carry up to 6,000, 7,000 MVA. I'm not saying that continuously to carry that.

Losing that in one shot may be acceptable, but you don't add another 5,000 megawatt line so that you lose a 12 ---. You have a 12 megawatt --- sorry, 12G or 12,000 megawatt efficiency. It's very --- I don't think even that there is any tower inside the United States that is a double circuit 765.

CHAIR:

If PJM had not allowed the closure of all of these coal and gas-fired plants, would we still be needing this transmission line?

A. I did not do that analysis.

CHAIR:

It doesn't make sense that when those coal-fired plants and those gas plants were generating electricity, the electricity was getting to the customers and we didn't have to have this MARL line.

A. As I said, I did not conduct the analysis. But in isolated areas where the imbalance or the need is solely driven because of the retirement of a generating facility, the answer would be yes. But in our case it's not only the retirement of the generating facility, it's also an increase in load. And it shifts in power flow because --- because of the market economics.

So it would be very difficult for us to say that if PJM, for some magic powers that we don't have, prevent people from retiring their generation, we wouldn't need transmission.

CHAIR:

Is part of your analysis related to all of the wind farms and the solar farms that are in the queue that may or may not be built?

A. That's a great question. We are required to make

reasonable assumptions, as in doing planning, especially in the longer term, to make assumptions related to what future load and generation, so that we don't end up overstressing the planning model and overestimating or overstating the need. So we start with the load forecast. We see if we have enough generation in the existing system and approved fuel to be able to cover the load requirements.

And then if we have to study longer term, we have to come up with a set of generation assumptions on where the generation capacity will likely materialize if this load to show up. And part of that, some of these assumptions we offset part of the need of load and some of it will just enable energy balance to happen.

CHAIR:

With the retirement of the tax credits, are you expecting all of these wind farms and solar farms that are in the queue to be built?

A. That's not my expertise, but I can speak to the planning exercise that we have been conducting in PJM. Not necessarily part of the 2022 and the '23, but that played a role in the 2025 one, for example. So we looked at the current state of affairs at the federal level, at the state level, the economics of developing different generation and other incentives that could be local. And

there is a significant chunk of thermal plants that will have to materialize.

But also economically, some of --- specifically the solar, the solar, when coupled with batteries, might have economic business case to develop.

In other words, PJM developed a capacity expansion model that predicted credible development scenarios. And we did not only develop a single scenario, developed multiple latitude of scenarios. And they all converged into a future that we utilized that intelligence to develop the likelihood of worker generation that would be required would be materializing, and roughly what type of resource mixed split we are going to see.

And so that what I'm saying does not seem to be weird or speculative, this is the state of the art and planning. You cannot build an infrastructure that will last 40, 60, 80 years without making assumptions the best you could today. Because building a means of infrastructure project takes a very long time and we cannot stay behind the eight ball all the time on it. We will have to make some assumptions regarding the future.

CHAIR:

We have pending before us now a 1,200 megawatt gas-fired generation. And it's proposed to be located in Maidsville, West Virginia or Fort Martin. If

that plant is built, does it need this transmission line to get its power to market?

A. Absolutely, this line and the two 765 lines. This is what will clear the space on the 500 kV lines that we have today and will offer a collective set of paths to transfer the surplus generation from West PJM to East PJM, including West Virginia. Without doubt.

So some of the assumptions that we made inside PJM to credibly assess that the surplus generation will likely come from the west side of PJM. Includes making assumptions related to thermal developments across PJM that will then later on transpire into specific locations.

Of course we did not have a crystal ball to know exactly where the plant is going to be located. But the backbone that will enable that surplus flow should be enabled by this project and the two upcoming ones, mainly the two 765s.

CHAIR:

If the Commission approves the project that's before us, And if the utility that owns it wants to export power outside the state and the money that that's generated by that power comes back to our West Virginia ratepayers, is this plan needed to get that power to customers outside of West Virginia?

A. If I understand your question correctly ---.

CHAIR:

It was a convoluted question.

A. So the line that is before us, is going to clear the congestion or contribute significantly to clearing the congestion that historically has been experienced across this corridor ---. Together with the two 765s, there will be much less constraints on the generation in western PJM, including in West Virginia, that would allow the more economic generation to run with minimum amount of constraint or with much lower congestion level that will contribute, as I may understand your comment, to generating surplus revenue or additional revenue to the generators.

In other words, it provides an economic opportunity for the generators to be profitable, less congestion.

CHAIR:

I sort of remember that at one point it was suggested to PJM that this MARL line consists of two 500 kV lines?

A. Yeah.

CHAIR:

And PJM nixed that idea. Why was it proposed to be two 500 kV lines and why did PJM say no?

A. So in the original window, Madam Chair, FirstEnergy

proposed the double circuit 500 kV. As I clarified, that proposal ended north in the Dobbs' area. But Dobbs' area doesn't have sufficient evacuation capability.

The MARL line brought a surplus power from the west towards the east. And in addition to that also offered a third, an additional 500 kV path inside Northern Virginia. That was one of the main reasons why the double circuit 500 was not picked.

The other thing is that at the time we did not see a material benefit of putting a double circuit 500 kV line for that length. Because of the reasons that I have clarified to Commissioner Raney, we prefer to hold until we see the 765 if there is going to be a need for one additional circuit. And also to be able to manage the contingency of losing the double circuit 500 kV. All of those were factors that we took into account in preparing to develop this 500 kV first before we add significantly more capability.

CHAIR:

I don't have any other questions. Mr. Callas, do you have any Redirect?

ATTORNEY CALLAS:

Yes, Madam Chairman, I do. As I imagine you know an hour in yesterday, at 4:45, I didn't really have much on my list, but we've gone three hours since

then. So yeah, I do have a number of areas and I'll try to make them pointed to respect our time.

REDIRECT EXAMINATION

BY ATTORNEY CALLAS:

Q. Dr. Abdulsalam, we heard some at the very end of Mr. Colley's testimony an explanation of the lack of tie-in. And Mr. Hockman also ask you some questions about it. You were here during Mr. Colley's explanation of that and his reference to the project before --- in the DEA

Do you basically confirm his explanation of that --- how the Black Oak project is involved with MARL?

A. I do not recall Mr. Colley's exact explanation, but I think I covered that today. That termination into Black Oak was proposed part of a different proposing entity proposal, which was the 2024 one after the award of MARL to address 138 kV constraints that I have highlighted, both on the thermal and the voltage side. It is to enforce the 138 kV system. And by the way that's a transmission system not a distribution system.

But its purpose is to provide the local needs of the communities and the areas spanning through the coverage of that kV system. Some of it exists --- some of it exists in Virginia, some of it exists in Pennsylvania. Some of it exists in even in ---.

Q. To support the west --- the 138 kV ---?

A. Yes, and the associated load here.
Q. Right. Is the same true with regard to the 502 junction station? Does it have 138 kV connections that the MARL line would provide support to?
A. To my best of knowledge, there is no additional transformation required that 502 junction that became part of MARL. But having the 500 --- a stronger 500 kV network coming out of 502 junction will definitely enhance the reliability and resiliency of that substation that provides a source of supply to the underlaying 138 kV.
Q. Thank you. Mr. Stephens asked you some questions about the other solutions in 2022 Window 3. And I remember you saying that a lot of them had similarities. And then today you've talked about --- I think you said maybe there were five.

And I asked this question in connection to make the record clear on this. There was another question earlier yesterday to another witness that had to do with, are they all in West Virginia? Were all those proposals in West Virginia. Is it a fact that they were?
A. All of the eligible or reasonable solutions that are 500 kV designed to transfer power from west to east, originated in West Virginia and were all of them heading towards the Dobbs' area, all of them.

Q. There was a ---.

MR. HAYNES:

I'm going to object. I mean, I just want a clarification, because --- and his testimony can speak for himself, but one of the five final solutions was actually the Joshua Falls to Yeat line, which is totally in Virginia. So his answer there is not exactly correct, just to clarify the record.

A. I believe ---. May I comment, please? I believe I said that all 500 kV solutions originated in West Virginia and terminated in Northern Virginia or Maryland. I already clarified to Commissioner Raney that 765 was an anomaly part of that package and it was not selected because of the reasons that I already touched on. But thank you for the ---.

BY ATTORNEY CALLAS:

Q. I'd like to ask a couple questions that seek to tie together your observation today that with regard to the proposals in 2022 Window 3 that MARL had an edge, and how the discussion yesterday about cost estimates and cost comparisons and bidding, how those two concepts relate. Did PJM do its own cost estimate for the MARL project?

A. Absolutely. It's part of the normal business practice, part of the requirements of us contacting the --- an independent third party benchmark type of cost

assessment to compare all projects that do not have firm cost containment provisions against each other using the same benchmark standard of cost.

Q. So would it be accurate to say that, you know, if the assertion is that there was an initial preliminary cost estimate and then a project was awarded and a DEA signed and then the price goes up, that PJM did not rely entirely on that initial preliminary cost estimate and making the determination to award the project?

A. Yes. So in short, PJM, with lack of a strong cost-containing provision, we did not rely on the cost estimate that was presented by NextEra for that project. We developed our own cost estimate and it is provided on the record to be around $1.2 billion. And still we picked the project with that figure.

I would like to also correct record or put it on the record that this is not a bidding process, per se. This is more of a form of closed envelope type of submission. And if everything else is equal, if all projects are performing equally, from a reliability need, they are effective, they are cost-efficient and they address the need, then next we turn to the cost as a factor in the assessment. And also we take the impact --- both environmental, societal and all that the nature of the project gets considered.

But in this case, MARL was selected first, because it met the need. And second, even while meeting the need, its cost was comparable to other 500 kV solutions.

But it had a technical edge in two aspects. Aspect number one, that it had --- it added an additional transfer path into Northern Virginia. Aspect number two, there was one of the few projects that introduced VAR enforcement midpoint along the line, which should enhance its capability.

Q. We know that cost is not PJM's only consideration when evaluating these projects. But are there other factors that PJM considers in evaluating bids that ultimately bear on the cost to customers when they have to pay for a line besides just the estimate of project cost?

A. Yes.

So FERC, under Order 1000, requires the selection of the more efficient or cost-effective solutions. In short, the best value. It's not the cheapest bid, because we don't want to invest billions of dollars and impact landowners with 200 foot wide or more right of ways and then continuously come at them with more and more and more lines repeatedly.

The line or the solution has to be robust in a way that it does not only address the imminent or the near

term or midterm needs, but it should have flexibility that offers options for expandability for the future. And it also has to have efficiency in terms of the relevancy of the technology.

For example, like if we --- that proposes a technology or utilizes technology that's dying or that's old and we have another project that's at a slightly higher price with a more proven technology, we will be leaning more towards the proven technology for the good of the ratepayers and the good overall PJM. So it's more efficient or cost-effective, it's not the least cost.

Q. Okay. I'm not sure you got the sense of the question I was asking there. So let me see if I can ask it in a different way. Are there other factors that PJM considers when evaluating a bid that go to the cost customers? In other words, besides the overall projected capital cost?

And by that I mean, are there other offers that are included sometimes in bids and sometimes thoughts that go to how costs will be recovered from customers?

A. So the cost-containment provisions, so that any project will have an anticipated or an estimated cost capital. And then on top of that the developer, because they are carrying operational and maintenance one end type of costs, and they are also carrying cost of capital

and so forth, they need to specify their requested return on equity or return on investment.

So there are two things in addition to the --- to the fixed amount of cost that we look at. Number one, is there any cost-containment provision included in the file. And then once that check is made, what type of cost-containment provisions are included? We have, at a high level, two types of cost-containment provisions. One of them is a hard cap is similar to a fixed cost type of provision. And that would be applied to the entire project, the package or components of the project.

In major infrastructure projects, that's very difficult because mostly it imposes difficulties on the developers for many reasons. The other more frequently used cost containment is soft cap, which means that the developer will propose to limit their return on equity to a ceiling for their proposed capital. And then if they exceeded the capital that was part of the cost of developing the project, they would propose a floor that they will not go below.

In other words, they will propose an initial rate of return on the capital that they will recover at. And if they exceed spending that capital in executing the project, they will accept a lower rate of return on equity.

In this project, NextEra did submit a flexible cost-containment provision that we took into account. For all the other 500 kV projects that were submitted part of the window ---. For example, FirstEnergy did not have any type of cost containment that is competing with this nature of cost, even the soft cost containment. LS Power did have a soft cost containment, but way below the performance level of the NextEra approach.

Q. Thank you. Yesterday during Mr. Auville's questioning of you, he was asking about what the starting point was for the update reference step, pages 13 to 14 of your Rebuttal Testimony. Do you recall that line of questioning with him?

A. Yeah, I do.

Q. Yes. And I --- I think you may have indicated that it was based on or had to do with a 2031 case. Do you believe that statement is accurate?

A. I believe that I misspoke there and it should be a 2032 case, not a 2031 case, as stated in my Rebuttal.

Q. Today, in Commissioner Raney's questioning of you, he referenced page 23 of your Rebuttal Testimony, lines one through six. And you commented on some of Mr. Egnatoff's observations about the reliability analysis.

But if you'll forgive me --- and I'll ask Commissioner Raney to jump in, if need be, I think you

were asking --- you were addressing a different position of Mr. Egnatoffs than the one that is captured in the testimony that he was asking about.

So if you would not mind looking at page 22, starting at line 17, through, you know, the first several lines of page 23, to reorient yourself to what it was that was Mr. Egnatoff's testimony you were observing about and to try to ask Mr. Raney's question again, if you could respond to that or elaborate on it.

A. Thank you for bringing that up. I think I did not --- I might not have covered the intent of the --- of the question. So let me --- let me explain what our position here is. We did Mr. Egnatoff's testimony in regards to data centers not materializing. If the needed infrastructure to enable them does not happen as a principal breakdown that obvious, the need for planning will be a ---.

And I'm going to be using a harsh word here, it turns the planning exercise into trivial exercise. Because if you do not allow the change to happen, if you do not allow the growth to happen, you will not need the transmission developments to materialize.

I think Mr. Egnatoff here got this a little bit backwards, that our responsibility as PJM, responsible for planning and operating at the reliability of the

grid, so that it enables the economic growth and the economic well-being and the policy direction of the region and of the states that we are serving.

It's not the other way around. We cannot just go and say, if MARL doesn't get built and if other lines don't get built, then your load forecast should be lower, then you will not need the lines, end of story, everyone is happy. I hope this is not how we believe our responsibility is. I hope I answered that question now?

Q. Yes. Yes. Thank you. Thank you. And speaking to --- you gave me a good segue, responsibility, PJM's responsibility. Commissioner Raney, you had a back and forth with him about dog in the race and you said we don't have a dog in the race. And in fact, in some ways PJM has obligations it is required by law to discharge. Would you consider that an amendment as we step back and look at this, to be the ultimate dog in the race?

A. So I was just responding with a sense of humor to Commissioner Raney's question. PJM is ultimately responsible for the planning and for the reliability of our footprint. There is no question about that.

The reference here was as it relates to why does PJM stand firm behind MARL, together with other projects that we are supporting? We do not have a specific emotional or financial interest with a specific project. That's

what I'm trying to convey.

We do not have a specific benefit that will --- that will come to PJM by forecasting specific future outcomes for PJM. Like we are not getting paid more by forecasting more megawatts. Right? We are not --- our job is not going to be impacted. We are not a for-profit organization. We are not going to be making money out of MARL. We are not going to getting benefit if transmission lines get built or not built or generators get built or not built. Our responsibility, however, is to maintain the liability of the grid. Yes, thank you for giving me an opportunity to clarify.

Q. There were a number of questions ---. Well, again, with reference to Commissioner Raney's inquiry of you about cost recovery, which he presented to you and another witness. What if cost recovery is not approved, you know, what would the result of that be?

And recognizing that you are --- this may go a little out of your lane, but acknowledging that you've been asked a question, let me see if I can explore that. You talked earlier about the ways in which costs are allocated to LSEs or I'm sorry, two zones.

A. Yes, two zones.

Q. And some costs are --- for these large lines are allocated across the PJM footprint, which is what the AEP

entities would be getting in West Virginia. And some are allocated on a DFAX basis of where who's causing them the problem that the project solves. And the evidence in this case is it's four zones.

All of those costs go to transmission owners. Is that how you understand it? Once they are ---.

A. To load-serving entities.

Q. And all of our utilities in West Virginia are load-serving entities?

A. Transmission zones. So when we develop a table associated with each project ---. I mean, PJM, for each project specifying the allocation and percentage of cost associated with each zone corresponding to that specific project. We do not look at how the TO or the responsible entity is going to collect that allocation. Now that is something that's not under the provision.

Q. But those ITOs are going to have that financial obligation, whether or not there is provision for recovery for it?

A. Right.

Q. And that is true not only for whatever the costs relating to this project are, if approved. It would be --- it is true for 500 kV improvements in Ohio or New York or any of the other 13 states that may not have any real DFAX assignment to West Virginia.

A. There is always going to be a DFAX factor. DFAX, by the way --- DFAX means that the percentage utilization of a specific transmission area or transmission zone how it is utilizing a specific element in the --- in the interconnected network. There is always going to be a value. But that value could be small. That value could be big. So there is always going to be a DFAX figure provided. But maybe it was be a very small number that will make a portion of specific developments very minimal.

Q. So my point is, and what I'm trying to ask you to explore is, there are projects and 500 kV facilities all around PJM.

A. Yes.

Q. And there are costs be them --- they smaller, a little bit more than small that go to ITOs ---

A. Right.

Q. --- relating to those? And presumably those --- all those charges here in West Virginia get passed through to Mon Power or Potomac Edison as transmission charges and get recovered in rates now, ---

A. Right.

Q. --- whether they touch West Virginia or not?

A. Absolutely correct. Yes. Because of the regional benefits of these projects here.

Q. Both Chairman Lane and Commissioner Raney asked about public stakeholders and --- in the context of the RTEP process. And I think you indicated that State organizations are sometimes invited. Is it your experience that State regulators participate in the RTEP process?
A. So ---
Q. Under that ---?
A. So to clarify the term invited means it's an open standing invitation. Like we do not invite on selective basis. The States, similar to any other stakeholder, is more than welcome to attend as they wish. And we do have proof that State Representatives are always on the --- on the call of the ---. Did that answer your question?
Q. Yes, it did. Thank you. The RTEP process that we're talking about that has been applied over the last several years to lead us where we are today, was it effectively the same RTEP process that was used to identify the need for the trail line?
A. It was a very similar process, a similar one. But it's --- there were differences during that time. I don't recall that at the time --- you can correct me if I'm wrong. Perhaps Third Order 1000 was not in effect at the time ---.
Q. Okay. I guess the --- the dates will appear in the

record as to what --- you know, how those lined up. But essentially that's the process that was used there.

Commissioner Lane asked you about what I think I heard her say as PJM's role in closing --- allowing to close coal plants. She didn't say which ones. Could you reflect on that and particularly at what PJM's --- what you believe PJM's role is or is not in forcing or allowing coal plants, wherever they may be, to close?

A. I would prefer not to speak specifically about coal plants. Let's not single them out. But as any --- especially for in a --- grade market, you have a generator owner operating, they have an obligation to their shareholders and to their organizations that they have to stay profitable. And they have to stay safe and they have to be in compliance with state and federal regulations.

PJM cannot force their hands in a market setup to go against state or federal law or to continue to operate while their operation is not economic or not safe. That's what I was trying to do --- that PJM cannot stand in the way. We don't have the power.

But what we have is if PJM identifies any reliability implication as a result of a retiring facility, we initiate the process of assigning that facility a reliability must run arrangement until the

needed transmission upgrades are in place.

We have just approved, in PJM, an enhanced deactivation process that would allow States to not only accept transmission as a replacement to deactivating generation, but it allows them a period of time to back replacement generation capacity to obviate the need for potential transmission. It's not still in effect, but it is --- it has gone through the approval process. We call it the updated deactivation process.

Q. You mentioned the RMR process. Is it accurate to say that is something that the owner of a facility that is the object of an RMR has no say in at all? Or does it --- does it --- does it participate in an agreement by which ---?

CHAIR:

Would you identify RMR?

ATTORNEY CALLAS:

Yes. Yeah. It's the term that the witness used. Reliability Must Run Program.

A. I think I will be delving way beyond my depth and responsibility in legal matters, but I would prefer if --- if Mr. Callas would like to have it on the report we can provide direct response to that.

BY ATTORNEY CALLAS:

Q. Okay. Thank you. Finally, I think it was, perhaps,

Chairman Lane's last questions about benefit to generators in West Virginia on the MARL line. And you said yes, there would be an explained ---

A. Absolutely.

Q. --- what that was. And the focus of her question was an application before the Commission now, with regard to a gas CCGP up near the Fort Martin site in Mon County, West Virginia. Would the same be true, the same facilitating factors that allow ---? You said less congestion means more sales, more profit. Would that also apply to existing generators, you know, that haven't been approved or built yet, that are in West Virginia?

A. So I hope that when I address that question, I mentioned that it does not guarantee profit. It guarantees an opportunity to make more profit for the more efficient units that are able to sell the power. And that applies to everyone on the side of exporting or pushing power across the corridor from the west to east.

And I believe I mentioned --- I might have mentioned AEP or Ohio. I mentioned Con Ed. I mentioned Kentucky. Any unit that's on the west side will benefit from relieving the congestion along the corridor that runs west to east in PJM that classically we have called it the heavy South.

And by the way, PJM market efficiency analysis has

consistently shown extreme congestion relief benefits out of the planned reinforcements. That increase included MARL, and that consequently materialized after MARL, including the 765 lines, part of the overall.

And if I am remembering correctly, and I think I mentioned this figure before, it amounts to a billion dollars a year in congestion savings costs.

Q. So the benefits would accrue not only to the plant that's under consideration, but the two coal-fired plants that are in the very same area up there in Mon County, West Virginia?

A. And the repairs also will benefit from lower prices. So it should have a downward pressure on the goods.

Q. Would the same be true for other coal-fired power plants in Northcentral West Virginia?

A. It should enable a much enhanced transmission corridor. So I would say yes, unless there is a more local transmission constraint that prevents them from doing so. But to my understanding, the majority of the congestion that happened from western PJM into eastern PJM was along the 500 corridor that we are enforcing today.

ATTORNEY CALLAS:

Your Honor, I have no other --- no more questions. Thank you.

CHAIR:

I have one more question. Listening to your testimony, you said that we need a 765 kV line.

A. Two.

CHAIR:

Two. Would this project have been better if it had been a 765 line instead of a 500 kV line?

A. I didn't analyze that.

CHAIR:

No, but you have all of this experience. You can tell us your opinions.

A. I would be very happy to operate the line to 765. But based on our planning assessment, I think we should be fine with the MARL line at 500 kV end to end, and one additional 765 in the northern end of West Virginia and another 765 through Virginia. Within the planning horizon I think so far it is sufficient.

CHAIR:

If this line were a 765 line, would we still need the Valley Lake line?

A. I did not do that analysis. I did not do that. But what the Rebuttal assessment demonstrates is that there are still going to be serious constraints along the 500 kV system if the two 765 lines are built and they don't have MARL.

So approximately --- if MARL is built as 500 kV line, and you assume that is equal to the proposed 765 kV line in the north on its own, it will not be enough. You will need to take ---.

ATTORNEY AUVILLE:

Sometimes the microphone comes out if they've been moved a bunch. If I can ---.

ATTORNEY CALLAS:

Yeah.

OFF RECORD DISCUSSION

A. Thank you. So what I'm trying to say is if we just step back and assume that the first 765 line gets built and we don't build MARL, we still end up with constraints at the 500 kV level. So that says that solution on its own is not enough. We are complementing it with the MARL line in this case, which is 500 kV.

Now we can end up with three 765 lines, but that's not applicable proposal that we have received part of the window and we did not see a need for so far.

CHAIR:

Okay. Thank you. I think that is all. And Mr. Callas ---?

ATTORNEY CALLAS:

The witness may be excused.

A. Thank you.

CHAIR:

You may be excused. Thank you. And thank you for all of your testimony.

A. Thank you very much.

CHAIR:

All right. We will now take a 15-minute break. And then when we come back, we will go to our next witness.

SHORT BREAK TAKEN

CHAIR:

You all may sit down. Would somebody please close the doors? Mr. Callas, do you want to call your next witness?

ATTORNEY CALLAS:

Thank you, Madam Chairman. Our next witness is Andrew Gledhill.

COURT REPORTER:

Can you please raise your right hand?

ANDREW GLEDHILL, HAVING FIRST BEEN DULY SWORN, TESTIFIED AS FOLLOWS:

DIRECT EXAMINATION

BY ATTORNEY CALLAS:

Q. Good morning, Mr. Gledhill.

A. Good morning.
Q. Could you give your name and business address?
A. My name is Andrew Gledhill. I work at 2750 Monroe Boulevard, Audubon, Pennsylvania.
Q. How are you employed?
A. I'm the Senior Manager of Resource Adequacy Planning.
Q. In that connection, have you been involved at PJM on load forecasting and particularly as it relates to the MARL project?
A. Yes.
Q. And in that connection, did you cause to be prepared Direct and Rebuttal Testimony, copies of which should be in the book beside you?
A. Yes, I have them here.
Q. Are there any corrections or additions you believe need to be made to make it truthful and accurate today?
A. No, there are not.
Q. Do you ask the Commission to accept this testimony as your testimony in this case?
A. I do.

ATTORNEY CALLAS:

The testimony having been admitted, Madam Chairman, I offer Mr. Gledhill for Cross.

CHAIR:

Mr. Hanna.

ATTORNEY HANNA:

Thank you. Thank you, Chairman.

CROSS EXAMINATION

BY ATTORNEY HANNA:

Q. Morning, Mr. Gledhill.

A. Good morning, Mr. Hanna.

Q. Your name was mentioned a few times in Dr. Abdulsalam's testimony, so I'm sure you're --- were you present for all of his testimony?

A. Yes, I was.

Q. Okay. Great. Mr. Gledhill, I want to talk a little bit about the unprecedented rate of load growth that the PJM observed related to data centers in Northern Virginia, as well as new load growth in Maryland due to data centers.

Is that fair characterization, that that growth, at least from 2022, was seen as unprecedented, as far as you --- as far as you understand?

A. Yes, I would consider it to be unprecedented.

Q. Do you have any explanation of how or why that's --- why that load growth is so unprecedented?

A. I think there are some unique characteristics to the Virginia area that has made it attractive to data centers. We have been hearing about data centers in

Virginia since I believe it was the 2014 load forecast. When they looked out into the early 2020s, they thought there to be the potential for roughly one gigawatt of data center load.

As we sit here in 2026, we see roughly seven gigawatts of data centers. So the expectations early on, about a decade ago were far beneath what eventually had ended up happening in Virginia.

Q. Do you anticipate that projected load growth attributed to data centers to continue to increase?

A. I believe there's a lot of inertia for the data center load growth that's happening in the State of Virginia for various reasons.

Q. For PJM to come up with this load forecast, do you generally rely on information submitted by the LSEs, the utilities, regarding anticipated large customer load growth, such as from data centers?

A. Yeah. So we start with a baseline forecast that's predominantly driven by a statistical model. There are some things that statistical models are not good at capturing, such as significant changes in load growth from year to year. And so we do rely on electric distribution companies and the various utilities across the PJM footprint to help inform us about various trends that might be missed by that statistical model. Often

this could be things such as a large industrial plant going off or it could be something new like a data center that's been happening more recently.

Q. Does PJM do anything to independently verify projected data center load estimates that it receives?

A. Yes, we have lots of discussions with the distribution companies about either the methods or the customers that are projecting for interconnection. So in the case of Virginia, we have lots of conversations with Dominion to review their methods for how they're anticipating various levels of data scenario.

Q. Has that --- what you're doing now to I guess make that --- have those discussions regarding data center load growth, have those --- has that changed over the years, those sorts of how you handle that, how you address that?

A. Yeah, absolutely. It's been an evolution. So if you've been ---. When we started doing this back in 2014, the load growth was concentrated to one area. It was in the Dominion footprint alone. I think it was in 2023 or 2024 was when we started to see a more material expansion as to where the data centers were being located.

So from say one or two transmission zones to maybe 10 to 12 different transmission zones. And so the ---

the approaches needed to become a little bit more uniform and more educated over time to understand say what might be some top-down constraints that might limit that growth or and so forth.

Q. So the process or is there any specific criteria that PJM would use to evaluate specific data center projects as proposed to determine the viability of those projects and their likeliness to actually be constructed?

A. So just to --- just to correct, we do not do a, you know, customer-by-customer level forecast. The responsibility of PJM is to take into account of the zonal expectations and the RTO expectations for peak energy demand over the 15 to --- next 15 to 20 years.

As we get that information from EDCs, they will talk about their characterization of different loads and we will independently look at different sources, whether it be a couple years ago we brought on a consultant dataset to try to understand data center trends ourselves. And this year we brought on a consultant to provide an independent third-party view of data center load going forward.

Q. So in your --- in your Rebuttal Testimony, Bates number 148, you reference --- you state that PJM has also retained a consultant to evaluate potential barriers to data center development and will consider that analysis

and future forecasts. Is that --- the consultant you were just mentioning, is that --- does that reference that line in your Rebuttal?

A. I don't see the specific page, but yes, that would be the consultant that I'm referencing.

Q. So when was that consultant hired?

A. So let me go through some of the history. So last year there was a stakeholder process in PJM called the Critical Issue Fast Path on Large Load that evaluated various concerns around the integration of large loads and how they're represented in PJM. Out of that process, in --- January 16th of this year the PJM Board issued a letter. And in that letter was specific recommendations that PJM should bring forward for improvements to load forecast.

One of those improvements was bringing on a third-party vendor. PJM then issued an RFP sometime in the spring of this year and onboarded a vendor and we are currently in the process of working through that process.

Q. Can you identify the vendor?

A. Yes, they have had multiple presentations at PJM and they are Charles River Associates.

Q. And you said that they were officially hired this spring?

A. Yes, that's correct.

Q. And what exactly, what exactly have they been tasked to do by PJM?
A. Yeah, so we test them with both reviewing the load forecast submissions as well as producing their own independent view. So taking a look at both the potential top-down constraints, such as building materials, chips and so forth, and then also looking at the bottom-ups project submissions.
Q. So when you receive a --- PJM receives a forecast from a utility LLC that contains projected data center load growth, load growth attributed to projected data center growth, is that broken out from other projected growth or did they do it that way?
A. Could you clarify?
Q. Well, so when you get a projected load from an LLC, is it going to break out the categories that go into what's causing that growth?
A. Yeah. So the load forecast adjustments process is meant to be, you know, additive to the economic modeling that PJM does. And so there would be breakouts as to whether it's a data center or manufacturing or some other type of program that could either add or subtract to PJM load.
Q. And Charles River is specifically looking at that data center load growth?

A. That's correct.
Q. So you haven't had a ---? PJM hasn't had a load forecast yet that has included the input from Charles River; is that correct?
A. Not from Charles River, no.
Q. Okay. When would --- when would the first forecast, including their work come out?
A. The 2027 load forecast will be released in late January.
Q. Okay. And is --- is there a long-term contract with Charles River? Do you expect to have them on for a long term?
A. I think there's the expectation that the it might be renewed.
Q. And that's specifically a third party. There's no --- they're --- they're not --- there's not an employee who's performing that function that Charles River is performing?
A. Could you clarify the question?
Q. So you hired --- PJM, hired Charles River as a third party outside consultant, and the plan is to continue that relationship, at least for now, without hiring a PJM employee to perform that function?
A. So we do have ---. So on my team I have several employees that work on the load forecast that are also

taking a look at the load forecast adjustment submissions. So I'd say there's a PJM approach where we look at the submissions, but then there's also looking at Charles River as well.

Q. So their --- part of their work is to identify maybe specific end-use customers, these data center customers that have contributed to the load forecast?

A. Yeah. So they're tasked at looking at the potential for data center load growth, considering things commercial operation, commercial probability and potential barriers to that load materializing.

Q. Are you familiar with the Prince William Digital Gateway Project Data Center?

A. I am.

Q. Is that --- am I correct, that was a proposed 2.7 gigawatt data center complex to be located in Prince William County?

A. Yes.

Q. Would that be considered part of Data Center Alley in Northern Virginia?

A. Yes, it's in the Northern Virginia Electric Cooperatives territory.

Q. Do you know if that --- the load from that data center had been included in any load forecast to support MARL?

A. So let me --- let me back up a little bit. So the load ---. Again, as I was saying earlier, the load forecast is a forecast for a zone. When we're taking a look at load forecast adjustments or various data centers, not every data center is considered to be moving forward at a hundred percent probability.

So if you look at --- there's documentation that NOVEC or Northern Virginia Electric Cooperative has posted on pjm.com where they talk about how they have bucketed projects into high, medium and high --- or excuse me, high probability, medium probability and high risk. And so there is a probability of waiting that's associated with different projects.

And so it's not just a --- the load forecast is not a straight sum of all potential projects. There is a probability associated with those. So I would say that the Prince William Digital Gateway was not included at a hundred percent.

Q. That project has been canceled at this point. Is that correct?

A. That's my understanding.

Q. Do you have your Rebuttal --- I think it's your Rebuttal Testimony before you? Actually, it's your Direct --- Direct Testimony, Bates Number 2525?

A. Yes.

Q. Yes. It's the 2024 load forecast supplement attached to your Direct Testimony.

ATTORNEY CALLAS:

Probably is not.

A. I don't think I have it in front of me.

ATTORNEY HANNA:

Okay. Thank you, Mr. Callas. Correction. Thank you, Mr. Callas.

ATTORNEY CALLAS:

For the record and folks wanting to follow along in their six volumes, this is volume six of the six-part application.

BY ATTORNEY HANNA:

Q. Mr. Gledhill, are you on the Bates Number 2525 of that?

A. I am, thank you.

Q. Okay. And is this from the 2024 --- I guess the 2024 low cast --- load forecast supplement attached to your Direct Testimony. Is that accurate?

A. It appears to be the case, yes.

Q. As I look at the graph at the top, the ---. It says Dominion Zone Total Data Center Historical and Forecasted Mid-July Load. Can you tell me what that graph --- explain that graph and what that represents?

A. Yeah. So this is --- this is a bar chart that

explains the breakdown of the contribution to the summer peak forecast.

Q. And the first line below that says with the data provided, steps are taken to isolate the impact on the final forecast to mitigate double-counting concerns. Do you see that?

A. Yes, I do.

Q. Can you explain what double-counting concerns is?

A. Yeah. So double-counting concerns ---. So when you have historical data center load that shows up in the history, if you are not to do anything on the statistical model, some of that embedded load growth will then be pushed forward into the forecast horizon.

So what we mean by double-counting is that we --- we have the historical data center load, we remove it from the historical loads that we use to estimate and forecast our models, such that we can isolate the impact of the data center, such that when we produce the forecast, it doesn't include some amount of embedded data center load plus some amount of forecast because you would ultimately be double-counting.

Q. Does it ---? Does this ---? Are you able to successfully remove all double-counting or is there still the risk that there'll still be some double-counting within the forecast?

A. I think you have to define what you mean by double-counting. I'm talking specifically about the type of double-counting wherein the forecast includes the embedded trend of historical loads.
Q. I guess I'm just --- I'm just picking on the word where it says mitigate double-counting concerns, as opposed to saying remove double-counting concerns. Is it --- is it --- would it be fair to say that it just --- you can't 100 percent guarantee that it's --- it's all removed from double-counting?
A. So let me put it this way. So we get the historical data center demand from the utilities that provided the submissions. It's not something that PJM just ordinarily has. And so if that data was to be incorrect, which we believe it to be correct, then yes, you could have some potential for missing double-counting.

ATTORNEY HANNA:

Thank you, Mr. Gledhill. No further questions.

A. Thank you, Mr. Hanna.

CHAIR:

Mr. Harkins.

ATTORNEY HARKINS:

No questions for this witness. Thank you.

CHAIR:

Ms. Grundmann.

ATTORNEY GRUNDMANN:

Yes, thank you.

CROSS EXAMINATION

BY ATTORNEY GRUNDMANN:

Q. Good --- afternoon. I thought we were close. I'm going to jump around a little bit, and you're going to have to let me know if something is or is not within your scope of duties. But I assume as a resource planner you probably do address a lot of these issues that roll up into the RTEP process. Is that fair?

A. I will try my best.

Q. So I believe yesterday, NEET witness Colley, testified that PJM had checked and rechecked and confirmed the need for MARL several times, something to that effect. Do you recall that testimony?

A. Yes. And that was also stated in Dr. Abdulsalam's testimony that the RTEP is an annual process that takes into account updated forecasts.

Q. And I want to talk about that a little bit, to make sure that we are as level settings. So the way I understand the RTEP is that it looks forward in a given year. So 2022 would have looked at what it looks at what like 2027 and 2031 or 2032, something like that?

A. Yeah, that's correct. So the RTEP is typically

defined --- defining needs on a five-year horizon, but then it will also look at either seven or eight years as well.
Q. And so what essentially happens is in 2022 you're looking forward at what you expect to exist on the grid at that time.
A. Correct. So the 2022 looked at 2027. Correct.
Q. And it would also have been looked at 2031?
A. I think Dr. Abdulsalam, I think, talked about that a little bit in his testimony. I think --- I don't know what year the --- in addition to 2027 that it looked at.
Q. But what it looks at, as we look going forward. So then in 2023 it would have looked five years forward in 2028. Is that correct?
A. That's correct.
Q. Now, here's the question that I have, when it comes to the checking and rechecking.
A. Uh-huh (yes).
Q. Is it rechecking the need for the project or does the future RTEP embed in its analysis that project will exist?
A. I don't know if I'm necessarily the person to answer that. So I provide the forecast inputs, but I don't run the RTEP itself.
Q. Okay.

Are you aware that within the PJM zone in the last several years, both the DOM and the BGE zones have separated, have had price separation in the capacity markets?
A. Yes, that sounds correct.
Q. But that the rest of the zones have cleared at the capacity clearing price?
A. Well, it depends on the auction. I mean, recently that we've been clearing at the cap RTO-wide.
Q. Are you saying that Dominion did not clear at like $445, which was above the $329 cap?
A. I'm not a markets' expert, but there's currently a cap across the RTO, and I think that's through the --- I think that's through the 2029 VRA.
Q. Well, the cap exists, but that doesn't necessarily indicate what the clearing price would have been but for the negotiated cap?
A. Yes, but I don't do that analysis.
Q. Fair. I want to go back very briefly to the discussion that you had with Mr. Hanna. I wrote down the phrase as you all were discussing the double-counting issue, you described the historical trend for embedded loads?
A. That's correct.
Q. And I just want to tease this out a little bit. So

what I thought I understood you to say is because we go to these EDUs and ask them for their load growth information and forecasts, we have to pull out from our statistical modeling historic data center growth to avoid incorporating what would be the normal projected statistical data center growth plus the specific load growth that comes from these EDUs. Is that correct?
A. Yes, I think that's a fair characterization.
Q. Okay. Because one of my questions was going to specifically focus on how you were adjusting that. Okay. So then I want to go back to --- I think that you mentioned the seven gigawatts or the 7,000 megawatts load that is projected to be in Dominion's queue as we sit here today. Are you familiar with that?
A. That comment was not that it's projected. That comment was that that's what materialized in 2026 actual. In other words, that seven gigawatts is here today. It's not projected. That's not projected at all.
Q. You're saying what has accumulated over time?
A. Correct.
Q. But you --- are you aware that there's another seven --- that there's 70,000 megawatts or 70 gigs that are projected to be in Dominion's queue?
A. I think I've heard that term, but that's generally not --- that's not what's submitted to PJM for

consideration.
Q. Correct. And so are you aware that in the AEP Ohio territory that when it adopted a data center tariff, that the amount of projected data center load in that service territory reduced by more than half?
A. Yes, I've seen that commented on. And that AEP was also not submitting its entire data center queue.
Q. And similarly, are you aware that there is a pending proposal before the Virginia Commission to adopt interconnection standards that would impose some fairly substantial financial commitments on data centers in the Dominion zone? And I don't just mean Dominion retail, but it would include, I believe, NOVEC and OVEC and all of the various entities that flow up into the DOM zone?
A. I'm not familiar with the specifics, but I am aware that that's going on.
Q. But you are aware that, then, in general, each year Dominion is all linked, pushing up 2,000 to 3,000 megawatts of load per year for study at the RTEP?
A. Could you clarify? I'm not sure I follow the statement.
Q. Yeah. It's my understanding that each year Dominion is only committing to studying about 2,000 to 3,000 megawatts of load at a time.
A. Okay.

Q. Are you familiar with that?
A. Sounds familiar, but I don't have that specific --- that's not in my testimony.
Q. Give me just a second.
Oh, real quick. When --- I'm going to ask these questions of Ms. Menhorn. I understand you're not a cost-allocation expert, and I know that Dr. Abdulsalam discussed this a little bit, but there are certain zones within PJM that occupy multiple territories of multiple states; correct?
A. Yes. Yes, there are.
Q. And when it comes to the allocation of costs, PJM doesn't do anything to differentiate whether it's APS in --- APS in West Virginia, to your knowledge?
A. I'm not an expert in that area, but that's my understanding is that it's to the transmission zone.
Q. Okay. And so when you all are identifying need within a given zone, you all are also not distinguishing between whether that need exists in APS in West Virginia versus APS in, for example, Maryland?
A. That's a bit outside my area of expertise.
Q Well, when you're doing a load forecast ---?
A. Correct. When we do a load --- when we do a load forecast, we, we do it at a transmission zone level. We often --- we have RTEP State reports where we will talk

about our estimate of what the State composition is. But that is an estimate, we are not forecasting the State components of transmission zones.

Q. So let me just repeat it, because I think you anticipated my question. Just so the record is clear.

A. Sure.

Q. When it comes to load forecasting, you all also only forecast based upon the zone, not specific to a state?

A. That's correct. So we forecast it's 20, 21 --- 20 or 21 zones. We have groupings that I think Sam has referred to as LDAs or Low Deliverability Areas. So there are 27 LDAs, which are groupings of zones. So we do zones plus groupings of zones, plus CRTO.

Q. And so there's been a number of questions. I think you had indicated you've been in the room for most of Mr. --- or Dr. Abdulsalam's, so you probably heard these questions. But there have been a couple of questions about whether there have been data center load growth within West Virginia, whether there are needs within West Virginia that are driving this project.

And I've heard a couple times that there are data centers within the APS zone that have been driving some of this. But are you able to answer whether it is the West Virginia APS zone or whether it is just, to your knowledge, the broader APS zone?

A. To date it has been predominantly in the Potomac Edison part, so in the Maryland portion of the APS zone. That said, there has been significant interest in siting data centers within West Virginia.
Q. And do you mean that as it relates to the APS zone specifically or just West Virginia more generally?
A. The APS zone specifically.
Q. But it's my understanding, and can you correct me if I'm wrong, but there ---. Have you all accepted when it comes to your large load forecast --- have you accepted from the utilities in the APS zone within West Virginia, have you thus far accepted their proposed data centers that they say are coming? Because it's my understanding that you all have not deemed them firm enough to include in your large load forecast.
A. In the 2026 load forecast, APS made a request for a large load, which was a data center, in the APS zone. A significantly derated portion of that was put into the 2026 load forecast. So in other words, it's say it's a data center of certain size. We then pull it down significantly.
Q. So a couple --- I want to tease a couple things out.
A. Sure.
Q. Number one, to be clear, was that APS West Virginia or was it just APS, again, potentially in a state other

than West Virginia?
A. There are both submissions, both in West Virginia and in Maryland in those parts of the APS.
Q. Okay. So of what you accepted, derated or otherwise, was part of that accepted derate related to APS load within the West --- the State of West Virginia?
A. In the 2026 load forecast, yes.
Q. Okay. And so when you say significantly derated, let's say you have --- let's use the example of a one gigawatt data center, what does it mean to significantly derate that project?
A. Yeah. So one of the things that we did with the 2026 load forecast, in advance of adopting a consultant, was to take a look at national trends to try to understand what would be a realistic figure. When --- so what I mean by that, when you ---. We got a significant amount of submissions from different TO zones across the PJM footprint. And when you straight add them up, it was not realistic in the national foot ---.

And when you consider the amount of data center load that might be required in the national, in the U.S., it wasn't considered reasonable. So what we did was that we took a look and tried to, you know, pinpoint a 2030 figure, such that we could derate some of the less firm data center load to a more realistic figure.

Q. Yeah. And I guess what I'm just trying to understand is what does significant mean? Is that 50 percent? Is it 80 percent? Is it 90 percent? What does it mean to be significant?
A. If you take a look at the submitted materials, I don't know if this is a part of the submission, but in the Load Analysis Subcommittee for PJM, we presented materials on the PJM, where we talked about a greater than 50 percent derate on the APS submission.
Q. Okay. And then so some of that derate would have occurred with respect to APS Maryland, and some of it would have been APS West Virginia?
A. That's correct.
Q. And so if we're talking the load forecast that was conducted in 2026, ---
A. Yeah.
Q. --- so in the RTEP for 2031?
A. Yeah. So it would have been published in January of 2026. And looking at 2031, it looks at all 20 years, but yes, that's the focus of the RTEP.
Q. Okay. Because you're trying to project when they're likely to come online and sort of the anticipated timing based upon current trends?
A. That's correct.
Q. Okay.

ATTORNEY GRUNDMANN:

Thank you, Mr. Gledhill. I think those are all our questions.

A. Thank you.

CHAIR:

Mr. McGhee.

ATTORNEY MCGHEE:

No questions.

CHAIR:

Mr. Stephens.

ATTORNEY STEPHENS:

Thank you, Madam Chairman.

CROSS EXAMINATION

BY ATTORNEY STEPHENS:

Q. Good afternoon, Mr. Gledhill.

A. Good afternoon, Mr. Stephens.

Q. You may have run into me in the hallway. I'm Bradley Stephens. I represent some of the Interveners, County Commissions, and a private landowner Intervener in this matter.

I have a few questions. I think they'll center mostly on your Rebuttal Testimony and some of the questions that Mr. Hanna, Ms. Grundmann, asked you. I'll try not to retread all the ground on those, but I might have a few clarifying questions for you on those.

So in your Rebuttal Testimony, from around page three to page five, you described load serving entity and electric distribution company roles as being more specific and intensive in regard to large load customers and evaluation of customer requests vis-à-vis PJM's planning process. Is that a fair way to characterize what you're conveying there?
A. Yes.
Q. So you're reliant on those load serving entities, those electric distribution companies, to --- to give you, meaning PJM, your Load Forecasting Department, reliable information; right?
A. Yes. As PJM is situated, we are not the overseers of the load interconnection process or we do not have direct relationships with the retail customers. So there are instances where these types of entities might have information that we do not.
Q. Okay. I appreciate that. And you make reference --- there's a footnote on page five of your Rebuttal Testimony. And it includes, as a link, I believe it's just a slide presentation from a PJM meeting and it's entitled Load Adjustment Request Summary for 2026 Load Forecast Preliminary. Are you familiar with that, where you cite that in that document?
A. Yes, that's what I was referring to when I was

speaking with Ms. Grundmann.
Q. Okay. So if I understand what is summarized and what is presented in that, that --- it's essentially correct an update of the 2026 load forecast or maybe a slight revision of it. Does that reflect ---?
A. No, it is a ---. It's not an update to the 2026 load forecast. It is a step along the way of developing the 2026 load forecast.
Q. Okay. How does --- how do you make the distinction between whether a data center is treated as firm load or demand or nonfirm? Where do you draw the line there?
A. Yeah. So we --- we started using these terms called electric service obligation and construction commitment. So electric service obligation means you have a contract to provide energy to that data center. Construction commitment means you have --- you have started the process to try to construct, to serve that data center. Those types of projects are considered to be firm. Anything that's beyond that would be considered nonfirm.
Q. Okay. Are those firm data centers --- the ones that are described as firm, does PJM or do you specifically assume there's a 100 percent probability that they will come online and draw energy off the PJM grid?
A. That was the assumption in the 2026 load forecast, yes.

Q. Okay. Is --- that firm load for each one of those data centers, is it modeled at 100 percent of its anticipated demand or is it a different figure?
A. Yeah, so this is often a point of confusion even in PJM stakeholder meetings and internally at PJM as well. So there are a lot of numbers when it comes to data centers. Typically when I talk about it, I talk about the capacity ask of the data center and then the ultimate final demand of the data center.

So capacity ask ---. So say you have a one gigawatt data center, that ultimate final demand might be 70, 80 percent of that gigawatt. So a one gigawatt data center might end up using 700 to 800 megawatts and then there's also a ramp. So that's often referred to as the utilization rate. And then there's a period of time.

So once you connect a data center, a data center is not going to go from zero to seven to 800 megawatts in one year or instantaneously. It usually takes anywhere from three, four or five years for that data center to materialize into its final demand.
Q. And for that reason, don't you model these on a 36 month ramp? Essentially three years; right?
A. That was what we used in the 2026 load forecast. And that's something we continue to revisit over time.
Q. Will --- the Charles River Associates' involvement,

will --- is that anticipated that it might change that time frame?
A. That is among the things that they look at is to how --- how long it takes projects to materialize into their final demand and what that final demand would be. So yes, that's something they look at.
Q. Do you happen to know what criteria that Charles Rivers Associates might use to reevaluate and maybe change that 36 month ramp that you use right now?
A. It's going to vary. It's also going to --- I think one of the other things it's going to --- it does vary some by ---. It can vary by area. The Charles River Associates has inhouse expertise that they can use to evaluate this.
Q. Okay. Does the execution of an electric service obligation, an ESO for short, using that acronym; right?
A. Yes.
Q. Does the execution of an ESO between a load serving entity and a data center ultimately require the data center to move forward and be placed into operation?
A. I would say that the contractual arrangements are going to vary by both state and utility. And they often have various terms under which governs the type of connection and the financial obligation of the data center. There's expectations set.

Q. Certainly. But would you agree that those contracts could very well have a termination clause that may enable the data center to pay a termination fee and terminate that agreement?
A. It varies by state. I am not a contract lawyer, but I do know that some of the provisions across the various states have things such as exit fees.
Q. So that's a possibility with any or all of the data centers that are currently being incorporated into the load forecast of PJM; right?
A. I guess that's a possibility. I mean, this is why we bring in a third-party consultant. This is why we also have one of the other parts of the Board recommendations was to institute a rear review or relevant electric retail ratemaking authority review. So talking with the various Commissions prior to providing a submission to PJM.
Q. Okay. Does it make an impact on your load forecast at all? Is it currently taking into account any data centers that have plans for onsite behind-the-meter generation, maybe diminishing their reliance on input from the PJM grid, essentially drawing off energy off the PJM grid?
A. Yeah. So I know there are various proceedings related to colocated. The goal of the PJM forecast is

the demand that the PJM network will serve.
Q. Are you assuming that none of these data centers that are incorporated into the present load forecast would have any onsite generation?
A. It's one of the questions we ask. We haven't seen a significant amount of that type ---. Sometimes those types of projects don't even get submitted to PJM. So if there's a generator that's completely covering the load, then that type of thing wouldn't even be submitted.
Q. But you're speaking of a --- maybe what we would call in West Virginia maybe misdescribing it micro grid. Maybe it's islanded, not even grid-tied and has onsite generation. Is that what you're referring to? That wouldn't be included in the loop?
A. If you're. If you're invisible to the PJM system, then you would not be included in the forecast.
Q. Okay. I'm not sure I got clarity on ---. Does your load forecast take into account the fact that ---? I don't mean to say the fact that, but the potential or the possibility that some of these data centers that are incorporated in the load forecast may have some onsite generation?
A. I would say ---. I would say not --- not explicitly from PJM standpoint, but I think that does get reflected in the submissions themselves.

Q. Would that be something that Charles River Associates is going to look into?
A. They have been looking at backup generation in terms of, you know, bringing on new data center demand. And they actually have a presentation this coming Monday at a PJM stakeholder meeting to talk about their findings on the overall data center demand projections.
Q. Okay. I wanted to ask in response to some of Ms. Grundmann's questions. You mentioned you referred to a derating of one or more projects that I guess in the APS zone that you were made aware of. I'm not sure --- you referred to a 50 percent derate. Can you explain to a noneconomist, nonelectrical engineer what that means? What's the result of that?
A. Yeah. So when we looked at national projections and we compared that relative to the amount of the gross submissions that we were receiving from our transmission owners, we saw a mismatch between the amount of load that could be expected from data centers moving out in say the 2030 time horizon. And then we tried to --- we sort of squeezed down the data center submissions until they were more in line with those national projections.
Q. Okay. I appreciate that.
A. And that generally tends to be reflected more in the immature data center markets than the mature data center

markets. So markets like Dominion, which tend to have more maturity and more inertia and have shown data, they have existing data center loads that are currently ramping into their final demand and have lots of data center loads coming on time over time.

Q. Going back to that slide presentation I referenced earlier in the --- Exhibit 1, your Rebuttal Testimony, you had a page on there, because you include, presumably, all the transmission zones. There's one for AEP and of course has their firm and nonfirm data center anticipated load. That's incorporated in the forecast and that's shown in the curve, right, the color designations. Do you know if --- if any of those firm AEP data center loads are located in Appalachian Power or Wheeling Power service territories?

A. I don't believe so.

Q. Where are they located?

A. Data centers are predominantly in Ohio and Indiana.

CHAIR:

Mr. Stephens, ---.

ATTORNEY STEPHENS:

Yes.

CHAIR:

It's time for our lunch break.

ATTORNEY STEPHENS:

Well, that works out wonderfully, Madam Chairman, because that was my last question.

CHAIR:

Good So have you finished your questions?

ATTORNEY STEPHENS:

Absolutely.

CHAIR:

Oh, okay. Well then we will break one hour for lunch.

ATTORNEY STEPHENS:

Thank you.

LUNCH BREAK TAKEN

CHAIR:

Mr. Williams.

ATTORNEY WILLIAMS:

Thank you.

CROSS EXAMINATION

BY ATTORNEY WILLIAMS:

Q. I'm Robert Williams. I'm the Director of the Consumer Advocate Division. I've got a few questions for you. Some of them are following up on things you talked about earlier.

But before I get into that, just in general, I don't --- I think probably one of the more difficult things any of us are trying to grapple with is trying to figure out

what's going on with data centers, since there's so little --- so little transparency about what the data centers are actually doing.

So as I understand that the information you're getting is sort of thirdhand, not from data centers but from the RTOs that are being approached by data centers or the LLC.

A. It's typically the wires companies, so it's typically the electric distribution companies. And as I was talking about earlier, PJM does not have direct relationships with the regional networks. That's outside of our purview.

Q. So the LDCs are giving you their best information that would be reflected like for us if they filed some sort of projections with us. They do five-year plans with us, planning of their projections?

Sometimes they include data center information, sometimes they don't. Is the same information you're getting from the LDC the same thing they're providing their respective Commissions or are they other information off to the side?

A. So EDCs probably do their own overall system-level forecast. We are only asking for information on that which would be incremental to a PJM forecast. And so we are not asking about their total system level forecast.

We are only asking about the data center portion or any other large load adjustments, whether it be positive or negative that wouldn't be captured by the PJM process.

Q. So like I'll just give you an example. Chairman Lane made reference to it. We've got a pending case in front of us filed by --- by a FirstEnergy entity, saying we need to build a 1.8 gigawatt plant.

CHAIR:

No, it's two gigawatts total.

BY ATTORNEY WILLIAMS:

Q. Two gigawatts total.

But I think part of it was ---.

CHAIR:

No, I'm sorry. 1.2.

BY ATTORNEY WILLIAMS:

Q. 1.2. And then --- big numbers anyway.

A. Yes.

Q. Is a big number. And then we asked them say, well, where are you on talking to the data centers? And they tell us, oh, we've got like four gigawatts of data centers waiting in line for it.

We said, well, when can you get one to sign an agreement to us? So we know it's coming so far they have nobody to sign an agreement. In that circumstance, would you be counting that? How would you count that data

center load if --- if they came in front of you with that kind of discussion?
A. Yeah. So if it's representatives as not having either an ESO, electric service obligation, or construction commitment, then we would deem that to be nonfirm and we wouldn't --- we would not really consider it in any way until beyond the three or four year horizon, at which point it would probably be considered derated in terms of the probability of coming ---.
Q. Okay. So let me see if I can understand my ---. So like they said, we've got one gigawatt that we're waiting for somebody to sign an agreement on. Obviously you wouldn't count that in the first year, but would you give them a derated value based on that representation?
A. It's going to depend on a case-by-case basis. Again, as I was talking about earlier, PJM does not do a customer-by-customer level forecast is taking into account the various customers that are coming into a specific area and trying to come up with a reasonable, credible projection as to what the system piece might be.
Q. Okay. Just the struggle that we've had as Consumer Advocates, and I think other groups around the country have had. Is it possible that some data centers are shopping multiple options, until they sign agreements? They're looking to see who they can get to the market

quickest. They're looking to see who can satisfy their needs. And right now there's not enough generation even to meet their needs, much less have ways to deliver it to them.

One, there's --- and that's part of the reason I'm asking a question. That's part of the reason some of them are looking at behind-the-meter solutions, finding a way of building your own generation to match with it, finding other alternatives that are different than the dynamic that PJM offers, because they think PJM may not be ready for them quickly enough, as quickly as they're wanting to put AI into action.

When you got this projection and --- that you thought that there was going to be an additional 7.5 gigawatts of load in the D.C. area, where you already have Data Center Alley created, is that based on signed contracts? Is that based on what's --- what level of representations do you have from that load is actually going to be realized?

A. Are you talking about back in 2022?

Q. In '22, yes.

A. Yeah. In 2022 Dominion did have a fair bit of signed contracts that was supportive of their load. They don't necessarily use a contract amount. They don't go customer-by-customer contracts in order to get to their

projections for a data center. They use more of a modeling-based approach to try to account for some of this double-counting that you're referring to, but it does vary area by area.

At the time --- I can't --- I don't think FirstEnergy necessarily had an ESO at the time, but that was also not a metric that we were using. At the time there was several publicly-announced projects in the first area - the FirstEnergy area of PJM that seemed credible and we wanted to make sure to plan for them.

Q. Okay. And so with the ones that they didn't have signed ESOs, but they had reasonable assurances that something was going to go forward, sometimes data centers will say we're going to be having a two gigawatt center. Sometimes you're going to have something a lot smaller.

A. Yeah.

Q. The hyperscale is kind of a new phenomenon, is it not?

A. Yeah, hyperscale is sort of a fuzzy definition. I typically think of it as those that are sort of the big four, big five of data center developers. So you think about Microsoft, Amazon and so forth.

Q. Yes. So they're the ones looking to create like if they can have a data center village almost created where they've got like six gigawatts or eight gigawatts or

whatever, however big they can make it is what they're seeking to locate in different places. Now, beforehand in Northern Virginia, did they have a lot of large data centers like that or were they relatively small, compared to what people are talking about?

A. So Virginia has been a data center market for a number of years. I think it started out smaller. You'll often hear them talk about hoteling or multitenant type data centers. But there are also significant presence of some of these larger hyperscale-type tenants. So it's --- I'd say it has evolved over time and it includes both types.

Q. In looking at this case, trying to prepare ahead of time, we looked at some testimonies also filed in Virginia for the Virginia State Corporations Commission. Piece of this, which is the only ---. It's really just about --- compared to us, is only 2.4 miles in Virginia, going from the Woodside Substation with a new 500 kV line in Frederick County, Virginia.

But part of the testimony provided in that case was provided by a gentleman named Gregory Abbott, who was the --- he recently retired from the Virginia Commission, State Corporations Commission. He was Deputy Director of the Utilities Regulation Department. Are you familiar with his testimony or are you involved in that case at

all?
A. It rings a --- rings a bell. I don't have it in front of me. I think I've read it, but I'm not exactly sure on the details.

ATTORNEY WILLIAMS:

If you don't mind, I'd like to pass out a copy of that to the Commission and to the other party so I can ask about certain aspects of his observations.
A. Sure.

ATTORNEY WILLIAMS:

And see whether you think they're accurate or not.

CHAIR:

Thank you. Mr. Williams, do you want this marked as Consumer Advocate Division Cross 1?

ATTORNEY WILLIAMS:

Yes, very much, Your Honor. Thank you.

(CAD's Cross Exhibit 1 was marked for identification.)

ATTORNEY CALLAS:

I'm hoping that, I'm sure you will, Mr. Williams will identify on whose behalf this testimony was submitted and what role that party played in the case he's referencing.

ATTORNEY WILLIAMS:

As said on the copy of the document itself, this is prepared by Gregory Abbott. He is retained as a consultant in that case, not as a representative of the Commission Staff at that point.

ATTORNEY CALLAS:

On whose behalf?

ATTORNEY WILLIAMS:

It's on behalf of Respondents, Teresa --- I don't know how to pronounce the name, but Yorzi, Alan Hahn Jr. and Alan Hahn, III.

ATTORNEY CALLAS:

And are they supporters or opponents of the project?

ATTORNEY WILLIAMS:

I believe they are opponents.

ATTORNEY CALLAS:

Thank you.

BY ATTORNEY WILLIAMS:

Q. I'd like to compare first on your exhibit and forecast, I think what we made reference to earlier was on --- on the 2024 load forecast supplement PJM did in January 2024 ---. I think earlier you looked at the Dominion total load zone forecast and historical forecast for mid-July load on Bates Number 002525, essentially we had earlier.

A. Yes, I'm there.
Q. And on your forecast, you're showing at least back in 2022, when you're originally doing these projections, at that point, most of the load that was data center load was actually on the Dominion system itself. And when you're talking about Dominion zone, the Dominion zone includes both Dominion and these other entities you've identified?
A. Yes, those are areas within the Dominion transmission zone.
Q. So when they're showing the growth in the Dominion itself is fairly --- it's increasing, but it looks like most of the growth is happening in NOVEC, which would be Northern Virginia Energy --- Northern Virginia Electric Cooperative?
A. Cooperative.
Q. And are the data center we're talking about including all those areas or just part of it?
A. Yeah. So the Dominion zone ---. So Data Center Alley is typically talked about as Loudoun and Prince William Counties. Dominion and NOVEC both have distribution within Loudon and Prince William Counties.
Q. Okay.
A. So some data centers would be served by Dominion and some would be served by NOVEC.

Q. And when you were talking about inertia earlier, are you assuming inertia is going --- moving forward and gaining momentum or is there a slowdown to some of it? Inertia can also ---.
A. I was talking --- when I was using the term inertia, I was talking that there's a base level of momentum of data centers in that area.
Q. Are you aware of the fact that Loudoun County has put in a one-year moratorium?
A. Yes.
Q. And what does that mean as far as what can be planned or how does it impact your projections?
A. Yeah. So a moratorium is something that we're talking about with our consultant for how it might impact the 2027 load forecast. I would say that even with a moratorium, there are many existing data centers in Loudoun and Prince William that will continue to ramp into their final demand, even if there is no new data centers.
Q. Okay.
A. And there's a significant amount of growth there. Even no new build, there's still a significant amount of data centers.
Q. So when you're talking about the ramp, you're talking about the 36-month period traditionally that

somebody might take from when they put it in full ---?
A. The comment I was making there was with regards to a data center that might be in existing today might not be at their final utilization.
Q. Okay. At their final utilization ---? That's one reason I wanted to look at some of this analysis I got from Greg Abbott. Like I said, unfortunately I don't have him as a witness, but I'd like to have you comment on a few of the things that he observed, see if this is accurate.
If I'm looking at page six of his analysis, he attempted to do a 2022 PJM load forecast and then separate out what was projected as the data center portion load from the overall increase.
A. You're talking about --- you said page six?
Q. Page six.
A. Okay.
Q. So based on his analysis, he was saying there's about --- a shown in your projections about 6,930 megawatts of growth in the DOM zone that will be associated with ---. And then he said how much, so to say ---. And he took it --- showing that in the DOM zone with data centers and without data centers.
The 66,930 is approximately the seven point --- is about the seven gigawatt growth you were talking about

happening?
A. That seven gigawatts, I think that --- that we were talking about earlier is from the 2022 modified load forecast and probably also reflected in the 2023 load forecast.
Q. So he was showing that without the data center growth, there was some growth in the DOM zone, but almost all of it's attributed to projected data center.
A. There are a lot of behind-the-scenes factors, where it's hard to abstract --- because if you ---. If you think about it, there's also ---. If you think about load forecasting, there's things that are adding to growth and there are things that are subtracting from growth.

So for instance, there's been a lot of behind-the-meter solar that shows up in reduced load on the PJM system. There's been energy efficiency that shows up as reduced load in the system and there's economic growth that shows up as, you know, additional load.

And so when you abstract all from that, yes, outside of data centers, the trend is relatively flat. But just think that you have to imagine that there are lots of pluses and minuses that are --- that are resulting in that.

Q. And I think there is also a recent change in Virginia, where, at least in portions of these entities, they're starting to require them to go under a special load tariff or high load tariff that requires them to nominate at least a minimum level of usage, 85 percent usage. Are you familiar with the reasons why they would have done that?
A. I think it was primarily consumer protection, but I am not --- I was not involved with the various conversations around how the rate tariff was structured the way it was.
Q. Okay. So beforehand, if somebody was saying like we're going to be a one gigawatt data center, and like you say it ramps up, would they necessarily be using all that gigawatt ---? You said wouldn't be doing it out of the gated, and take a while to ramp up.
A. Correct.
Q. Once they've fully ramped up, at what percentage would you anticipate they would be using the system for PJM? Are you assuming they use the full gigawatt or would it be something less than that?
A. What's the four gigawatt? I'm not sure ---.
Q. The full gigawatt.
A. Oh, the full gig. Oh, so you're saying you have a gigawatt data center that's connected ---?

Q. Let's say it's fully ramped up.
A. Yeah. So this gets back to my discussion around utilization. So a gigawatt data center is not likely to use a gigawatt. We've heard it uses anywhere from 70 to 80 percent of that, depending on the type of data center. Sometimes it could be higher.

But yeah, so once fully at its full utilization and the demand has saturated, it would be something less than that gigawatt. That's based on historical experience. I can't speak to every data center that's connected, but that's based on historical experience.

Q. And from that historical experience, part of this is --- in like Greg Abbott's observations was that the actual loads seem to be less than their top rated. It was something almost half of that.
A. Yeah. Again it depends on it's a data-center-by-data-center basis. Some of the multitenant data centers might use, you know, less than the 70 percent. Some of the hyperscalers might use more.
Q. Are you aware that particularly --- data centers, you're familiar that this is obviously a highly volatile, ever-changing target there looking for right now. Like if when you're trying to do AI, you don't really know how much electricity you're going to need. You're going to be modeling for it for today, it might change in the

future, based on how you're able to structure your AI. You might need less electricity in the future now than what you know. You know it's sort of like if I'm looking at TVs. Plasma TVs use up a whole lot of energy at one point. The newer LED models use a lot less energy.

A. Yeah. So when you're doing long-range projections you obviously have to make assumptions about various factors. Some of those factors can have greater uncertainty than others. But I would say that the nearer in the forecast horizon, the lower the amount uncertainty. Certainly I have more certainty around my projections for say 2027, 2028 than I do for my projections around 2045, '46.

Q. Yeah. So when --- you can feel more confident about it for two or three years out, but when you start getting 10 to 15 years out, there's a lot less certainty associated with it.

A. I would say, yeah, there is a cone of uncertainty that grows in any forecast the further you get out from today.

Q. With the data centers we're having today, would you agree that since you're having a plan for delivering the energy there, you also don't know where the new generation is being built to serve that load?

A. So as Dr. Abdulsalam talked about in his testimony,

we do rely on the interconnection queue to understand the potential siting of new generation as we look into the future.

Q. And when somebody decides to colocate or generate their own power to help support their data centers, at what point do you include them?

A. Well, this is something that we do inquire of our submitters is if there is, you know, onsite generation that could be offsetting their load, we generally have not had significant instances of that.

Q. But presumably if onsite generation happens, then the way that comes into PJM is reduced load versus the capacity or if they have their own backup power for certain capacity that could also be possibly utilized during high peaks to reduce their load on the overall system?

A. I don't think I have the information to --- I'm not sure what you're asking.

Q. Well, at one time didn't PJM submit a proposal to FERC about how to treat some of these large loads on being able to interrupt them or not ---?

A. Oh, so there --- there was the interim. Are you talking about the Resource Advocacy Service?

Q. Yes.

A. Yeah. So PJM did file Interim Resource Advocacy

Service that would have allowed PJM, when it was short of say the one in ten loss of load criterion. So we have --- we don't --- in layman's terms don't have enough resources by which to serve --- service the system adequately to a certain reliability criteria. So you just don't have enough load, don't have enough supply to meet the demand. We had submitted a proposal to FERC that would allow us, when we're in those events, to be able to curtail some large loads prior to others.

FERC ultimately did not accept that. They didn't accept the large load registry that we put in. And also the definition of large load.

Q. Now does that prohibit PJM from looking into whether certain loads could be interrupted, with cooperation?

A. Well, I know there's --- there's other --- other procedures, there's other processes such as the --- the Show Cause Order that FERC issued to PJM to, to look at the capability of flexible load and how it might be reflected in planning processes. That response is still going on.

Q. And are you aware in general that the State of West Virginia appears, at least leadership, and the Governor and the Legislature and other groups, are trying to encourage data centers to locate to West Virginia and utilize resources that can be developed in West Virginia

as opposed to remaining up in Northern Virginia and other locations?

A. I've seen some statements of that. I wouldn't say I'm intimately familiar with it, no.

ATTORNEY WILLIAMS:

I'd like to ---. And as a second exhibit, this is a --- just information from the --- maintained on this State of West Virginia's economic website, where they're announcing their principles for data center development.

(CAD's Cross Exhibit 2 was marked for identification.)

ATTORNEY WILLIAMS:

And our Governor has announced a plan to try to develop 50 gigawatts of electricity by 2050 to serve new load developed not only in our state but also in adjacent states.

And they're encouraging the micro grid development, which is 20 --- 2014 was an initiative that started in West Virginia to encourage data centers to consider locating to West Virginia, where we had abundant resources that could potentially provide them energy power they could rely on.

Part of the reason they did that was because we have a lot of natural gas resources that have

not currently been used to produce energy yet in this state. Obviously Ohio has a lot of natural gas plants now. Pennsylvania has natural gas plants now.

West Virginia is just now getting into the natural gas generation business. And we have the number four natural resources improving resources in the state in the country for natural gas.

BY ATTORNEY WILLIAMS:

Q. If this type of initiative is successful and data centers see somewhere like West Virginia or Kentucky as a good place to come and put in large campuses for data centers and provide local generation close to the source of the need, would that obviate the need for building or overbuilding transmission to serve growth in other territories --- it moves to West Virginia instead of staying up in Northern Virginia? What does that do?

A. Yeah, I don't think I'm prepared to speculate on that future. I don't think I have quite the information needed to really opine on that.

Q. Okay. Let me ask you a few questions about some projects that we actually have going on and ask you how that project would be viewed from PJM's perspective?

We have one project called Project Tamarack, which is Starwood Digital Ventures talking about a $12 billion data center complex planned for Northern Mason County,

which is in AEP's territory. Initially it's talking about providing 2.16 gigawatts of power supplied from an existing regional grid. Now when you're talking about using it from existing regional grid, I'm assuming that's saying they would utilize PJM, as opposed to generating their own power?

A. I don't --- I don't have it in front of me, but I --- that sounds like a safe assumption, yes.

Q. So if it's like that, then they would have to include that in ---. Obviously at that point, whoever is going to be serving that entity will be approaching you to say this should be included in your next projection?

A. Yeah, yeah. It's my earlier comment about the goal of the PJM load forecast is to understand the amount of network load that is pulling from that PJM system.

Q. Okay. We have another project called the Monarch Compute Campus N Scale, also located in Mesa County, near Putnam, near Point Pleasant. It's talking about a $69.2 billion client investment ecosystem, which is initially demanding two gigawatts power capacity. But they're talking about using dedicated colocated natural gas power guidelines --- source for it, where they'll be generating their own gas for onsite. And it's potentially expandable up to six --- another six gigawatts later.

If all that capacity is built and it has sufficient capacity to serve itself onsite, would that affect the resource adequacy and how that affects your load forecasts?
A. Yeah. So I think it would depend a little bit more on the details of the project. So for instance, who's going to serve the data center load if the gas generation is on outage? Those kinds of considerations if it's going to rely on the PJM spec that we need to account for it in some way. But yes, presumably there would be some offset in the load forecast to reflect that it's netting in some way.
Q. Now, if an entity is going to be asked to be backup source of supply for them, for when their other facilities might be down, how would you see that in your forecast? Would they have to meet the full demand of it or would it be weighted or ---?
A. What are they doing with the backup supply? Are they putting it into a PJM market in some way as demand response or some other type of product?
Q. Right now, under 2014, they can utilize --- they have to use 90 percent of their generation for their facility to be included in the microgrid, but they could actually sell ten percent of their generation into PJM.
A. Yeah. It's going to --- it's going to depend a

little bit on the --- the specifics of the project and kind of what is the expectations for how that would interface with the PJM system.
Q. Okay. And I think they're also planning on doing it with multiple buildings when they scale it out. So they would also be scaling out their generations. I'm assuming this --- if something had to go down for maintenance to shut everything down, so they wouldn't look for PJM for the --- a hundred percent accurate ---.
A. It probably depends on the needs of the data center customer. When we most --- when we hear --- what we hear about data centers is that they want 24/7, 365 power.
Q. I think maybe we reference to I guess there's some potential development up in the Jefferson County area and Berkeley County areas for data centers. Is that part of what's been presented to you all as justification for saying there is a need in the West Virginia portion ---?
A. I mean the --- the need was developed in 2022 and that was not included at that time, no.
Q. Okay. I'm trying to figure out other things. When we're talking about things and you've rated them down, I think I understand part of it is because it's ramped up. Part of it is even when it's fully ramped up, it may not be you needing its full rated capacity. we need something less than that. At what point are you able to

refine your projections? How much data do they give you to refine your earlier projections?
A. And we do it on an annual basis. So if you think about the load forecast process, every year we're starting fresh.
Q. Okay.
A. So we don't carry over load forecast adjustments from a year prior. We try to understand, based where you're sitting today, you know, what's the expectation that you have for this particular industry going forward and revisit it then.
Q. And so like when you're coming in, you hear the Prince William project is gone. You would pull that away from whatever value you gave it before?
A. Yeah. So we didn't --- so we didn't ---. We don't make specific customer adjustments like that. But if you look at the --- the statements by NOVEC and both the Load Analysis Subcommittee, as well as their posted materials, they do take into account when there's --- there's projects that have hurdles to reaching commercial operations. And so a project like Prince William Digital Gateway would have had various stages where it was discounted and then completely removed once the project was canceled.
Q. And I think overall PJM was projecting that if all

the data center load that's realized or at least has been discussed in the different portions of this framework, that it's short on generation by a significant amount, is it not?

A. Yes, that's something we've been talking about for a number of years. That the trajectory, when you look at supply versus demand, they're kind of reaching a crossing-over point in the next year or so where the amount of capacity that's procured in the capacity market is short of what we would need for say one in ten reliability.

Q. And if it's short on that, are you able to --- are you going to be advising your people participating in your RTO to decline new load or new large load until you have new generation to match it?

A. So PJM does not have the authority to decline load in that way, but we are seeking different procedures in order to ease this burden. So Dr. Abdulsalam earlier mentioned the reliability backstop procurement, where we're looking to procure new supply resources to help address the shortfall. We tried to go through with the IRAS, or Interim Resource Adequacy Service, to try to address some of this and we're going to continue to look for additional avenues by which to maintain reliability.

Q. In some places within your jurisdictions, the

utilities aren't allowed to own generation. In some places they are. In West Virginia they're allowed to own generation. You live in Ohio, they're not. Somewhere like West Virginia, they could put in a moratorium on new data centers if they didn't have capacity to be able to serve them, could they not?

ATTORNEY CALLAS:

Objection calls for speculation.

CHAIR:

You can answer the question.

ATTORNEY WILLIAMS:

If you can.

A. I don't know that I can answer the question. So you're saying can West Virginia put in a moratorium on data centers?

BY ATTORNEY WILLIAMS:

Q. I'm just saying there's some jurisdictions more in a better position for you when moratorium if there's not capacity to serve customers.

A. I am not an expert on retail. That's a --- more of a retail load issue. I'm not an expert on retail load interconnections. I don't think I can really opine on that.

Q. Fair enough. If a state like West Virginia is able to dramatically change the framework of new generation,

where new generation is attracted to the state, new generation is built to serve loads both in this state and in adjacent states around us readily, does that minimize or how does that impact the need for building additional transmission?

A. Well, I would say, insofar as what we've presented today, that the need is materializing as we speak. The need was identified for the year 2027. So I would say that new generation that's identified today that could maybe be commercial operational in some future would not obviate the need for the model line that we're talking.

ATTORNEY WILLIAMS:

I have no further questions for this witness. Thank you.

A. Thank you.

ATTORNEY WILLIAMS:

I'd like to have the second document identified as CAD Cross Examination Exhibit 2 and have that made a part of the record.

(CAD's Cross Exhibit 2 was marked for identification.)

CHAIR:

You would like that admitted into the record?

ATTORNEY WILLIAMS:

Yes, both, Your Honor.

ATTORNEY CALLAS:

I object to both, for different reasons. The first is easy. It's testimony from a witness who's not present here, his entire testimony. Let me suggest that if I presented to an opposing witness a piece of testimony on behalf of a NEET MA subsidiary somewhere else, that was advancing the interests of the project, everyone here would jump out of their chair objecting.

My objection is similar. As to the second exhibit, I don't think a proper foundation has been laid for it. I don't think he even asked the witness to identify it or open it, ask whether he had seen it or ask any questions about it. So for that reason, I object.

ATTORNEY WILLIAMS:

Your Honor, I think the Company itself, in this application, has submitted a number of letters from various entities in support.

ATTORNEY CALLAS:

I think that amounts to two.

CHAIR:

Let me just cut off the argument now, and we will admit it into the record, and we will give it whatever value we deem it necessary.

ATTORNEY WILLIAMS:

Thank you, Your Honor.

CHAIR:

Staff.

ATTORNEY WILSON:

Yes, I've got a few questions.

A. Good afternoon.

CROSS EXAMINATION

BY ATTORNEY WILSON:

Q. Hi. How are you?

A. Good. How are you?

Q. Good. So first question is kind of circling back to some of the questions that you were asked earlier about the Prince William County Digital Gateway project. You testified it was 2.7 gigawatts. Well, it would just say it was 2.7 gigawatts and that project was canceled. But based on that, PJM did not adjust its forecast.

Is that correct?

A. That's correct.

Q. And the main reasoning for that was because PJM generally derates projects, so all of it would have been included in your forecast anyways.

A. So in this instance, this was actually derated by Northern Virginia Electric Cooperative prior to submitting to PJM and there was no change because year to year as this project might have gone away, but there's

other new projects that have kind of filled the gap.
Q. Okay. So I guess my question is if, you know, the canceling, I guess, of a 2.7 gigawatt project isn't enough to get PJM to adjust its forecast, what does it take to --- how much would it take to get PJM to adjust its forecast?
A. I mean, that's going to depend on a case-by-case basis. It probably takes more in a more mature data center market like Virginia, like as I was saying before, where there's significant inertia for data center growth there. If you have a more immature market that is more reliant on a small number of projects, then the canceling of one project can have a more meaningful impact on the forecast.
Q. Now, are there any state regulators that are involved in evaluating the annual load projections from utilities in their states?
A. Yes, that's a new requirement that we put in place this year that, prior to submitting to PJM that they're to submit it to their state regulator for any comments that they might have.
Q. And as a result of this, are any of these load projections changed after the state regulators have reviewed that information?
A. Well, we haven't published the 2027 load forecast

yet, so I can't speculate yet.
Q. So you can't ---. Okay, so this is something new that should ---?
A. Yeah, this was --- this was asked for in a January 2026 Board letter to implement the process. So this past summer was the first time that this process existed. That said, as others have noted, PJM has an odd stakeholder process where Commission Staff, Consumer Advocates and so forth are willing to --- are able to participate.
Q. Okay. Then you also indicate that, PJM's process for, you know, evaluating changes in sudden load growth wasn't very good, which is why you all have hired a consultant and out a third-party consultant to help in that respect. Is that correct?

ATTORNEY CALLAS:

Object to the form of the question. Mischaracterizes what he said.

CHAIR:

Okay. Why don't you rephrase the question?

ATTORNEY WILSON:

Okay.

BY ATTORNEY WILSON:
Q. So I will say so at this time, PJM has hired a

third-party consultant to help with evaluating sudden changes in load forecast. Is that correct?

A. That's correct.

Q. Okay. And as a result of the --- of hiring this third-party consultant, I know you said you won't publish your first report until January 2027?

A. That's correct.

Q. Do you anticipate significant changes?

A. I don't think I can say at this time. The process is not complete.

ATTORNEY WILSON:

I don't think I have any other questions.

A. Thank you.

CHAIR:

Thank you. Interveners, Mr. Haynes. Right?

MR. HAYNES:

Yes. Thank you. Thank you, Madam Chair, Commissioners, and thank you for your very clear ---.

CHAIR:

Are you speaking into the mic?

MR. HAYNES:

There we go.

CROSS EXAMINATION

BY MR. HAYNES:

Q. Thank you for your very clear and concise answers.
A. Thank you.
Q. I think so --- Therefore, I think what I'm going to. And I don't --- I'm not meaning to be smart with this question, but ---. So you --- you are the senior manager of resource advocacy for PJM; correct?
A. Resource advocacy, planning, yes.
Q. Resource advocacy, planning. What is the term --- in that context, what does the term resource mean?
A. Resource is a universal term. It could mean generation, it could mean demand response, so forth.
Q. Okay. So it does include generation, even though PJM ---. Okay, so you're --- you do evaluate, obviously, generation?
A. Yeah. So PJM is responsible for running the wholesale power markets. One of those wholesale power markets is the capacity market. The capacity market is responsible, generally, on a three year look-ahead, to determine the amount of resources that's needed in the system to meet various reliability criteria. You often hear us talk about one in ten. So that means procure enough generation such that based on the amount of demand uncertainty, supply uncertainty, what's the amount of resources that you need, such you would only see a resource inadequacy event once every ten years.

Q. Okay. But if I understand correctly, PJM can't require the construction of new generation; correct?
A. That's correct.
Q. You have no button there. And I guess this is why I was asking the question about what does resource mean? I mean the resource that you have control over is really transmission; right?
A. Yeah. So we --- we are able to send market signals by which to incent new generation to connect. But in terms of things that we can identify needs for, we're limited to the transmission solution.
Q. Yeah. So that's kind of like your --- and that's, that's your name; right?
A. That's correct.
Q. Okay. Do you think that that's ---? So I'm going to ask an opinion question. You don't have to answer it, of course, but in terms of an overall grid, you know, adequacy and reliability and whatnot, is the fact that PJM only has that one button of new --- requiring new transmission, is that a flaw in the system?
A. I don't know if I would say it's a flaw. I think there are pluses and minuses to any system. I would say that we believe that the wholesale power markets have provided tremendous value to consumers through offering these cost generation to meet the needs.

Q. Yesterday there was discussion about or brief discussion, a couple questions, about what's in the queue.
A. Yes.
Q. There's a long queue of solar and wind, for example. Is there a ---? What's the queue look like for base load --- base load of any kind, you know, thermal plants, what the queue right now look like for that?
A. I am not a queue expert. I believe so. There's currently, I think, cycle one out there is our latest. And I think that starting to turn towards having some thermal generation in there as well. But I am not --- I don't have those numbers at my fingertips.
Q. And PJM as --- just to go back, has no lever to encourage more of that, is that --- that's correct?
A. I would say probably price signals are the lore. And this new initiative with the reliability backstop procurement, the goal there is also to procure new resources. So we try to send out market signals or develop processes by which we can incentivize new generation to come online.
Q. Could you give an example of some of those? How does that work?
A. Well, the reliability backstop procurement is going to be going through a FERC process within the next month

or so. I think we're planning on running that next year. But the capacity market runs annual or biannually, depending on, you know, what rule changes are going in place. So this coming December we're running a base residual auction, so a capacity market auction for the 2029 delivery year. And there'll be price signals within that market to try to incent new generation or load response to show up and meet that reliability need.

MR. HAYNES:

I think that's all. Thank you very much.

A. Thank you.

CHAIR:

Next Intervener.

MS. GRUBER:

Is there someone coming in the room?

CHAIR:

No. You can ask your questions now.

MS. GRUBER:

Thank you. Ma'am, this is Kristi Gruber.

CHAIR:

Okay. And please get closer to your microphone please.

MS. GRUBER:

Is that better?

CHAIR:

Yes.

MS. GRUBER:

All right. Thank you. Ma'am.

BY MS. GRUBER:

Q. Sir, I was wondering, I've been reading about the Dominion Energy in Virginia that is has decided that it has to retire their generation plants based on the new law that they created, which these --- the plants have to be going by 2045 and the Appalachian Power by 2050. So as you're looking at this, you were identifying this need, the need for the power generation as now, which is, you know, we're talking 2028, 2029, 2030, '31, which is a good 15 years before these power plants degenerate, the whole plants go away.

So is that tied into your plan ---? Is that tied into your plan that you're looking at these continuing to operate until 2045, or are you, as you said, you're looking at new, always looking for new opportunities? Are you --- are your plans showing new opportunities and that's why you're asking for all of these things, such as this MARL line going through West Virginia, or is this --- or has that not been incorporated into your plans?

A. Could you try to phrase the question in a different way? I'm not sure I can get at what you're trying to me

to answer.
Q. So in your transmission loads, right now Virginia is using coal and gas pump fuel systems to power their --- their data centers. So we're putting in this MARL line so that we can provide them power, which doesn't appear that they need until 2045 or 2050, depending on the stage where those retire.

So that's my question. Are you --- has that calculated in that we need this powerline, the MARL powerline, to get to Virginia so they can power these plants now as opposed to 2045 and 2050?
A. Yeah, I think ---. So the testimonies of Dr. Abdulsalam and Mr. Colley talked about how the need is present. It's not a need identified in 2045. I don't think we've generally identified transmission needs that far out.

Now there are potential proceedings through FERC Order 1920 compliance, which gets into long-range planning, but that's not related to this.
Q. Okay. So in that question, so you're talking the need that it's going to happen in the next year. And so is the gas and coal generation plants incorporated into the need that you're identifying or is that need that you identified above and beyond what the coal plants can manage?

A. I don't know if we've run sensitivities where we've turned off, you know, generation that's potentially retiring in the 2040 time frame. That's --- I do. I do not know the answer to that.
Q. All right, I appreciate that. Thank you.
A. You're welcome.
Q. One more thing. I understood Mr. Colley to refer to what you just talked about is the resource inadequacy that happens one in ten years on the existing system in West Virginia. And what I was led to believe in his testimony was that the MARL line would relieve that. Is that correct, that by --- by putting the MARL line in and reducing the traffic on our current local roads, that this inadequacy causing a collapse, would that go away?
A. Yeah. So thank you for the question. And I think we're mixing concepts a little bit. So when I talk about 1 in 10, I'm talking about the PGM system level of resources that are needed to serve the demand.
Mr. Colley was talking about, you know, the risk of transmission, collapse and so forth that might materialize. My comments are not to that.
Q. So was he correct in saying that by putting the MARL line in, we have alleviated that possibility that we would lose power every ten years for two or three days?

A. That's not in --- that's not in my area of expertise.
Q. All right. I appreciate that. Thank you very much, sir.
A. You're welcome. Thank you.

MS. GRUBER:

That's all I have.

CHAIR:

Thank you. Commissioner Larrick.

COMMISSIONER LARRICK:

I have no questions.

CHAIR:

Commissioner Raney.

COMMISSIONER RANEY:

Yes, ma'am, I've got a couple of questions. Mr. Gledhill, nice to see you.
A. Good afternoon, Commissioner.

COMMISSIONER RANEY:

You mentioned low ---. Let me see here. Low --- a lot of inertia a couple of times.
A. Yeah.

COMMISSIONER RANEY:

Explain it --- explain it to me again what you mean by that.
A. Yeah. So there are a lot of things that --- about

the Northern Virginia corridor that led to the creation of Data Center Alley and has contributed to its ongoing growth. What I mean by inertia is that there are a lot of data centers, so there's a lot of momentum. And my comment to one of the questioners earlier was even if you were to not build any more data centers in Northern Virginia, there would still be, you know, a considerable amount of load growth as those data centers ramp into their final utilization.

COMMISSIONER RANEY:

That's where I get confused. I take inertia to mean a lack of activity.

A. I'm talking about inertia from a momentum standpoint. There's a lot of inertia behind it.

COMMISSIONER RANEY:

Okay. You've got a difference of opinion based on your testimonies, Rebuttal and Direct. with Mr. Egnatoff and Ms. Kunkle.

A. Yes, that's correct.

COMMISSIONER RANEY:

So I'm going to give you an open mic, and I'm also going to give them an open mic for you to explain in very brief form, why there is such an exception to that. Am I messing stuff up here?

A. So my primary Rebuttal was with regards to the

characterization of various changes in load queues in several areas that were identified. I think it was Con Ed, and I'm sure I could get it in front of me. But regardless --- I think it was Exelon.

I think it was talking about Exelon. And I guess talking about various load interconnection queues. And it was talking about how there was a reduction in the queue requests to those areas and that should subsequently be reflected in a lower PJM forecast. My response to that was that these submissions are not completely including.

When an Exelon or an AEP comes to PJM, they don't come to us with their entire queue. I mean, if you talk to Dominion, Dominion might have 80 gigawatts in their load queue of people that are interested at some level of connecting a data center in Dominion. They do not come to PJM with 80 gigawatts. That was my primary critique.

COMMISSIONER RANEY:

You talk about the forecast is adjusted on an annual basis. And I think you've gotten into this. But do you anticipate that today's forecast is going to change before construction begins, should it be approved here in Washington?

A. I think forecasts change on a year --- yearly basis.

I would say that the need was identified for 2027, and I feel fairly confident about my forecast for 2027. And I think there will be continued growth from 2027 to 2032 and beyond.

COMMISSIONER RANEY:

Okay. So --- and enough ---. Do you think it's enough to alter the construction or the plan itself?

A. I'm not sure if I am ---. I'm not sure if I'm following the question.

COMMISSIONER RANEY:

Well, if it's going to change, I'm wondering, is it going to change ---? The plan we're looking at today is based on a forecast.

A. Yeah.

COMMISSIONER RANEY:

That forecast is going to change based on what you say. Is that what's going on? Shouldn't ask that question ---.

A. I don't think it's me.

COMMISSIONER RANEY:

I don't think it is either. But anyways, do you anticipate that change to be substantial enough to alter the plan that we're looking at today?

A. No. And I would echo Dr. Abdulsalam's comments

earlier that there would need to be a substantial reduction in the forecast projections in order to do that.

COMMISSIONER RANEY:

Thank you very much, sir. Nice to see you. Thank you, Madam Chairman.

A. Thank you.

CHAIR:

Doing your forecasting, has the push for electric vehicles continued or is it stable or is it decreasing?

A. Yeah. No, that's a ---. Thank you, Madam Chair, for the question. That's an interesting one. That's one that is heavily influenced by public policy. So the EV market has been very driven by incentives coming and going. Our most recent projection was reduced from the prior year, and that's largely a reflection of rolling in the various state and federal policies that have become, you know, less attractive to electric vehicle buildup.

CHAIR:

Has the electric vehicle market played a huge ---? How much --- how much has the electric vehicle market played into your forecast?

A. I would say it's more in the 2030s. So just to kind

of level --- set on context of the magnitudes that we're talking about, in summer of 2026 in PJM, there was about 11.5 gigawatts of data center load. Electric vehicles is probably anywhere between 500 megawatts to one gigawatt. So we're talking tenfold difference in magnitude.

So electric vehicles are likely to contribute meaningfully to the peak as you look into the long-term horizon. But the more the near-term forecast is more driven by this 11.5 and increasing level of data center load.

CHAIR:

You went to a third-party vendor to give you an analysis, I believe, of what may be needed of the PJM system. And you used Charles River; is that correct?

A. Yeah, so we went to Charles River to provide us with --- with aid in producing a data center forecast.

CHAIR:

Okay. Now, if I recall correctly, Charles River testified in this --- before this Commission on the Mon Power certificate case relating to gas-fired generation. Now, is there any conflict between Charles River giving you all advice and also giving advice to Mon Power?

A. Yeah. We did talk about, you know, various conflicts of interest in bringing on Charles River. And so there are various procedures such that they're not dealing on the same cases.

CHAIR:

Mr. Callas, would you like to speak to that?

ATTORNEY CALLAS: Yes, I think the answer is no.

CHAIR:

Okay. I don't have any other questions. Thank you. Mr. Callas, do you have any Redirect?

ATTORNEY CALLAS: I have just a few. Thank you.

REDIRECT EXAMINATION

BY ATTORNEY CALLAS:

Q. Mr. Gledhill, just a few questions, if you will. During Mr. Stephen's examination of you, before lunch, you gave us a tier of three levels of, I guess, discrimination or evaluation of data center load. The first one you described as capacity to ask. And then you said, I think was actual demand, which you characterized utilization rate. And then you talked about a ramping up, which kind of reduced that utilization rate or grew it over time. Does any of

those levels that you consider reflect or look like the announcements that we see sometimes from project developers?

CHAIR:

Mr. Callas?

ATTORNEY CALLAS: Yes.

CHAIR:

Could you pull your microphone out of the stand and then put it back in place?

ATTORNEY CALLAS:

I don't think it's ---.

CHAIR:

This is the only microphone on.

OFF RECORD DISCUSSION

BY ATTORNEY CALLAS:

Q. We talked about the three tiers you mentioned. And then I was about to ask you whether the announcements that we see from data centers, developers from local governments announcing projects from transmission or electric utilities that are reporting to their investors about their projects and process, do any of those kind of explanations, public-facing assertions of what the load is likely to be really relate all to the three tiers that you talked about?

A. I would say that my intuition would be that

investor-type presentations and media-type announcements are more aligned with capacity ask than they are with final demand. And then the capacity ask that would come to PJM would be a subset of media announcements plus investor relations.

Q. In other words, if one is trying to determine what PJM is actually considering in its load forecast, what one reads in the newspaper or in the business press about announcements would rarely reflect what you're considering?

A. Yeah. No, that's correct. Yeah. Because there might --- there might be various hurdles that the utility is aware of in terms of a project coming to commercial operation that might not necessarily be in the media.

Q. At the beginning of your testimony under Mr. Hanna's inquiry, we first talked about the Charles River Associates' engagement, the PJM Board's determinations in January of this year, and overall improvements that PJM is trying to make in its identification of large load incremental --- large load increments. And I understand that's ongoing. In your view, does the fact that any of those are ongoing or the need for them has been identified impair your testimony about the reliability of the load forecasts, specifically as it

relates to data centers that you have in your Direct or Rebuttal Testimony?
A. No.
Q. If you could look at CAD Cross Examination 1, which I understand is the testimony of a person named Abbott.
A. Oh, is this --- this one?
Q. Yes. I think you --- you may have been asked, in an attempt to set a foundation for this, whether you've heard of this testimony, and I think you said you might have. Is that correct?
A. Yes, that's correct. And I was pulled to the table on page six.
Q. Yes. Right. And that's the only page you're pulled to. Have you been asked by PJM or by any outsider to review, evaluate or assess the accuracy of anything that's in this testimony?
A. I read a lot of testimony. I don't --- the name sounds familiar, so I'm thinking maybe I've read this, but I --- I don't recall.
Q. You've certainly not in the context of this case, been asked to evaluate it?
A. No.

ATTORNEY CALLAS:

Your Honor, I have ---.

A. No, I was just going to ---. I --- as I was looking

at this table, the DOM zone, the 2032 number is 25,434. That's essentially what we saw in 2026. I just thought that was ---. So they just say --- I mean this was the --- before the modified load forecast. And the load that's seen here in 2032 is the load that was materializing in 2026 today.

ATTORNEY CALLAS: Thank you. I have no further questions.

CHAIR:

Thank you, sir.

ATTORNEY CALLAS: May this witness be released?

CHAIR:

Yes, he may. And thank you for your testimony.

ATTORNEY CALLAS:

And on behalf of NEET MA, I want to thank our PJM friends for their participation in this case.

CHAIR:

And I would like to note that we are now going to start on today's witnesses. So, Mr. Callas, do you want to call your first witness?

ATTORNEY CALLAS:

No, but I would like Mr. Presley to do that.

ATTORNEY PRESLEY:

Thank you, Your Honor. The Applicant calls Heather Heater to the stand.

COURT REPORTER:

Could you please raise your right hand?

HEATHER HEATER, HAVING FIRST BEEN DULY SWORN, TESTIFIED AS FOLLOWS:

DIRECT EXAMINATION

BY ATTORNEY PRESLEY:

Q. Good afternoon, Ms. Heater, could you please state your name and business address for the record?

A. Yes, my name is Heather Heater. I reside at --- my business address is 1701 Golf Road, Suite 1-700, Rolling Meadows, Illinois.

Q. And Ms. Heater, how are you employed?

A. I'm a partner at Environmental Resources Management Inc. Otherwise --- we could call it ERM for short.

Q. So you're not employed by NextEra or NextEra directly?

A. That is correct. DRM was hired as a consultant.

Q. Okay. And in that connection, have you been involved in its certificate application, which is the subject of this proceeding?

A. That is correct. ERM was hired to support the routing study and the environmental aspects of the project.
Q. And did you prepare prefiled Direct and Rebuttal Testimony in this case?
A. That is correct.
Q. And do you have that testimony in front of you?
A. I do.
Q. Are there any corrections that you make that testimony to make it feel truthful and accurate?
A. Not at this time.
Q. Do you ask that prefiled testimony be adopted as your sworn testimony in this case?
A. I do.
Q. Okay. And just real quickly, Ms. Heater, I'm going to ask you a few questions that relate to a discussion at the beginning of the hearing yesterday with respect to Ms. Linda Blancato's filings, dated October 16th and 23rd. First motion of Linda Blancato for site-specific water resource protections. And the second being her response to the Applicant's response to that motion. Are you familiar with those filings?
A. I am.
Q. And in her motion, Ms. Blanco requests certain conditions, including that NEET MA file specific

drainage and erosion control designs prior to construction near property, fund a hydrogeologist evaluation of potential effects on her private well and perform baseline testing, conduct evaluations of local siting and riparian protection and provide written procedures identifying emergency water and incident response. From your perspective, is that an accurate summary of her motion and filing?

A. That is correct.

Q. And did you have an opportunity to respond to the substance of those filings?

A. I did not. Those were received after our Rebuttal was submitted on October 7th.

Q. Okay. So let's just briefly talk about her specific requests. Do you think it's appropriate for the Commission to require EMA to file a site-specific drainage and erosion control design prior to construction near Ms. Blancato's property?

A. I do not. The project has specific construction and emerging and stormwater plan will be submitted to the West Virginia DEP prior to construction. And within that it will have an Erosion And Sedimentation Control Plan as part of the stormwater prevention pollution plan.

Q. Okay. Would you say it's typical for a project like

this to develop a site-specific drainage and erosion control design at this stage of the project?
A. It is not typical to do a parcel specific. It is typical to do a project specific Construction Stormwater Pollution Prevention Plan.
Q. Okay. And do you think it's appropriate for NEET MA to fund a hydrogeologist evaluation of potential effects on Ms. Blancato's private well and provide baseline testing?
A. I do not. It is not typical to do that type of study. We are continuing to coordinate with the agencies. And should technical studies such as this be required as part of say a West Virginia DEP permit, the Company will continue to evaluate that and work with the agencies.
Q. Okay. And what about her request to conduct evaluations of local siting and riparian production?
A. As part of the application, we had identified, based on preliminary engineering design, locations where riparian exclusion zones could be maintained. There are five within West Virginia at this time. The location near her property is not currently identified. However, as we noted throughout the application and in Rebuttal, there are opportunities between for additional areas to be considered if design can accommodate that.

Q. Okay. And finally, do you think that EMA should be required to provide written procedures for emergency water and incident response?
A. I do not. It's not typical. That information is already going to be included in the stormwater management plan that I identified earlier. And it would be redundant to do a project --- I mean, a parcel specific.
Q. Okay. So that would it be in the spill prevention control and countermeasure plan?
A. Yes. Thank you. It would be within both those plans.
Q. And that's filed with the West Virginia Construction Stormwater General Permit?
A. That is correct.

ATTORNEY PRESLEY:

Okay. And with that, Your Honor, I'll tender Ms. Heater for Cross Examination.

CHAIR:

Mr. Hanna?

ATTORNEY HANNA:

No questions. Thank you,.

CHAIR:

Mr. Harkins?

ATTORNEY HARKINS:

Thank you, Your Honor.

CROSS EXAMINATION

BY ATTORNEY HARKINS:

Q. Ms. Heater, there's a lot of information in the routing study and in your Direct Testimony. I'm going to try to keep it a much higher level than that. The proposed route, that has been identified as alternative route A; correct?

A. That is correct.

Q. Okay. And on page 41 of your Direct Testimony as Bates 2988, you state that ultimately alternatives B through F were rejected because they were not superior to the proposed route. I'll give you a second ---.

A. You said 2988?

Q. 2988. 2989. Sorry, next page. Has anything changed between January of this year, when the routing study was completed and present that would change the selection of the proposed route from alternative Route A to say, alternative Route E?

A. No. At this time we have --- the proposed route still stands as the selected route that should move forward.

Q. Okay. And as you sit here today, do you still believe that the proposed route is the superior route?

A. I do.

ATTORNEY HARKINS:

Thank you. I have no further questions.

CHAIR:

Ms. Grundmann?

ATTORNEY GRUNDMANN:

No questions, Your Honor.

CHAIR:

Mr. McGhee?

ATTORNEY MCGHEE:

No questions, Your Honor.

CHAIR:

Mr. Stephens?

ATTORNEY STEPHENS:

Thank you, Madam Chairman.

CROSS EXAMINATION

BY ATTORNEY STEPHENS:

Q. Hi, Ms. Heater. I'm Bradley Stephens. I represent the County Commissions and Ponderosa Pastures Corporation in this case. I think I only have a couple of questions for you. And if perhaps Ms. Powers with NextEra is better equipped to answer these, feel free to defer.

But it's my understanding with you having oversight over the routing study, you would have enough knowledge to speak to any crossings of public lands, state-owned

lands along the route?
A. That is correct.
Q. Okay. So for example, Coopers Rock State Forest in Monongalia and Preston Counties, I believe it's maybe just the Preston County portion that would be crossed by the route, is --- can you tell me the linear distance roughly, do you know? Because I'm not sure I can discern, you know, from the information provided. There is a whole lot there. But do you know offhand roughly what that is or --- the surface area in terms of acreage that would be crossed by the --- by these ---?
A. If you give me one minute, I'll see if it's in the ---.
Q. Sure. Thank you. Take all the time you need.
A. The information is in the Appendix D, the West Virginia Environmental Resource document. It is Table 2.37. There is roughly 73 acres. One second. The right of way corridor would have about 32 acres within Coopers Rock in Preston County.
Q. Thank you for that. And does that parallel an existing powerline easement or right of way there?
A. Generally, yes. It starts to deviate away a little bit towards the eastern end.
Q. Okay. So for much of that distance, if you include the existing right of way, this right of way would be

200 feet. So if you set that one right next to it, what's the total width? Do you know offhand? Is that about 350 feet, once you add them together? Do you know offhand?

A. I do not know at that location the existing right of way ---.

Q. But would that sound right based on the smaller line that's there?

A. Generally it sounds accurate. If they had 150 or 200 foot existing right of way, ours would be parallel and abutting at 200 foot. So that would be adjacent to that.

Q. Okay. I appreciate that. And I wanted to ask you about White Horse Mountain Wildlife Management Area in Hampshire County. I believe I have the right location. Just wanted to ask you generally, it's my understanding that in response to a West Virginia Division of Natural Resources' request that there was some adjustment to the proposed or the preferred route in that area; is that correct?

A. That is correct.

Q. And was that to --- was the aim to limit habitat fragmentation or forest fragmentation? Was that addressed in it?

A. Yes. West Virginia DNR reached out and asked if

there was an opportunity to further parallel and reduce that habitat fragmentation area.

Q. Thank you. And do you happen to know or if you could cite to the table ---? I'm sorry, I don't have it right in front of me, but could you tell me the acreage or linear footage that's affected by the proposed route in the White Horse Mountain WMA?

A. With the original route, it was roughly 15 acres. So give or take around the same, since we shifted closer to the existing transmission line.

Q. So even with the adjustments, roughly 15 acres; right?

A. I don't have the updated number right in front of me.

Q. You get --- it's close, is what you're saying, ---

A. Yes.

Q. --- regardless? Okay. Are there any other state or federal or county-owned public lands that are crossed by the route, to your knowledge?

A. Coopers Rock and White Horse Mountain are the two crossbodies.

ATTORNEY STEPHENS: Okay. I believe that's all I have. Thank you.

CHAIR:

Mr. Auville.

CROSS EXAMINATION

BY ATTORNEY AUVILLE:

Q. Good afternoon, Ms. Heater, John Auville, with the Consumer Advocate Division. How are you this afternoon?

A. Good, how are you?

Q. I'm going to start with a general question. Did --- did your routing study consider double circuiting even for short distances at all?

A. That was not a consideration as part of this routing setting.

Q. So was that your decision or was that a directive given to you by NEET?

A. We were --- as a consultant, we were provided what the analysis should entail, so ---.

Q. Double circuiting was not part of that analysis.

A. That is correct.

Q. Have you done routing studies where double circuiting was considered for the full length of the route or for parts of the route?

A. I have not. Others within my organization have.

Q. Okay. And the reason why I asked. Well, okay, so double circuiting is basically ---. So in this instance, the main goal of their routing study was to parallel existing transmission lines. So instead of paralleling it, you hang both the 138 and the 500 on the

same tower. So you don't abut the right of way. You use the existing right of way. And in this case, going from 138 to 500, you may have to widen the right of way, slightly but not to the same extent that you would when you abut ---?

ATTORNEY RANEY:

I don't mean to ---.

ATTORNEY AUVILLE:

And I can continue to testify if you'd like.

COMMISSIONER RANEY:

I've taken from testimony to this point that there's no interest in doing that. Is that --- am I missing something, sir?

ATTORNEY AUVILLE:

I believe that you, as the Commission, have the ability to order that if you would like, whether MEA is interested in it or not. As a matter of fact, it wasn't commissioned on the trail certificate.

COMMISSIONER RANEY:

Have I missed something for the last day and a half that indicates that they may have an interest in double ---?

ATTORNEY AUVILLE:

I do not believe they have an interest,

no. But that doesn't mean that it's not something that you could order, Your Honor.

COMMISSIONER RANEY:

Thank you.

BY ATTORNEY AUVILLE:

Q. And the reason why I ask ---. So Mr. Stephens asked about like specifically Coopers Rock State Forest, where you're paralleling an existing transmission line for about a mile. Is that correct?

A. Correct.

Q. And in that instance, would double circuiting for that mile blunt the impact of this transmission line through that piece of property?

A. Well, as you just ---.

Q. Lessen impact --- I'm sorry. That was a bad word. I apologize.

A. It would still require --- require the right of way to be widened.

Q. But not by as much?

A. I can't answer that. I am not the engineer or Company directive on how wide a right of way would need to be.

Q. Would it have also ---? In many places you deviated from the existing transmission line due to growth close to the existing transmission line. Is that a fair

characterization?
A. That is.
Q. And would it also maybe have been helpful to avoid sort of encircling a piece of property by putting a transmission line on both sides being able to double circuit through discrete areas of the --- of the route?
A. Again, that was not part of the analysis that we did.
Q. I'm asking you as a as an expert in routing, would that have been a helpful tool in your toolbox?
A. Again, that was not part of the analysis.
Q. Okay. I'd like for you to turn to page ten of your Are you there? Sorry.
A. Yes.
Q. You discussed how many structures are within 250 and 500 feet of the center line of this project. And initially you say it's 29 and 151 that's across all four states. And then in a footnote, you say there are 91 structures within 500 feet in West Virginia.
Can you tell me how many structures are within 250 feet in West Virginia alone?
A. I don't have that number in my hands.
Q. Could you provide that for us?
A. We could provide that.
Q. The Staff engineer suggested that the Commission

have a condition that any home within 400 feet of the right of way of the center line be purchased or offer to be purchased. Could you tell me how many houses are within that 400 foot buffer?

A. I cannot answer that right now.

Q. Could you provide that to us? I'm asking for an exhibit to have these numbers provided to the Commission, how many homes are within 500 feet, how many homes are within 400 feet, in West Virginia?

ATTORNEY AUVILLE:

Oh, well, 500 was her ---. I'm sorry, she already provided the 500 number. I apologize, 400 and 250, sorry.

A. Yes, that can be provided.

CHAIR:

That will be identified as Consumer Advocate Requested Exhibit Number 1.

(Consumer Advocate Requested Exhibit 1 marked for identification.)

ATTORNEY AUVILLE:

Thank you, Your Honor.

BY ATTORNEY AUVILLE:

Q. I know that no route is perfect, that there's going to be some impacts. Do you believe that too close --- too close to --- some distance is too close to a

transmission line?
A. One of the principles that we evaluated and considered in this routing study was not having residential dwellings within the right of way to see the ---. And that is the distance, I believe previous testimony yesterday discussed.
Q. Right, right. I'm asking is 20 feet from the right of way too close?
A. Again, the residential home would be outside and I think that would be acceptable.
Q. Okay. So in your testimony you mentioned I think it's Scott Markey, his home is within 120 feet. Can you give us ---? How close is 120 feet? Could you give us an estimate on how close that might be?

ATTORNEY HARKINS:

It's 40 yards.

ATTORNEY PRESLEY:

Were you asking how close 120 feet is?

ATTORNEY AUVILLE:

Yes. Like just give us ---.

BY ATTORNEY AUVILLE:
Q. Can you give me some visual representation that might make ---? How about I'll tell you this, half the distance of this building is 40 yards. Do you think that's too close to a transmission line for a home?

A. You're mixing units. What are you driving at? How close to a transmission line or the edge of the right of way do you believe is too close that the Applicant should consider giving some accommodation to that home?
A. I'm going to defer that to Ms. Powers.
Q. Okay. You don't --- as a routing expert, you don't have any opinion on that?
A. Again, I stated earlier that I believe that having the residential dwellings outside the routing corridor is acceptable.
Q. Okay. So 101 feet is good?
A. Yes.
Q. Okay. On page 26 of your testimony, you just ---. Of your Rebuttal Testimony, you talk about five riparian habitat exclusion zones.
A. I'm sorry, what page?
Q. Page 26.
A. Okay.
Q. Can you explain to the Commission what those are?
A. Yes. A riparian habitat exclusion zone is where we're able to maintain habitat on either side of a sensitive stream feature so that the tree canopy in this area could be maintained due to various reasons. And we've identified within the project a total of 21 locations and five specifically in West Virginia. And

as we continue to do design, there might be additional opportunities and locations that can continue to have these maintained areas.
Q. So how did you identify those five ---? What was the criteria for how those five were identified in West Virginia?
A. We looked at sensitive stream features and whether or not between two points of transmission towers there was enough clearance to allow the vegetation to be maintained.
Q. Okay. And I think further in your testimony, you --- you speak specifically about Dillons Run, which is not one of the five exclusion zones; is that correct?
A. Currently does not.
Q. And I assume it's because it didn't meet the qualifications that you just mentioned?
A. At this time, it has not been identified as one. Again, as I stated in my Rebuttal and earlier, we are continuing to evaluate whether or not features such as Dillons Run can become an exclusion zone.
Q. A little --- I don't quite ---. How could that happen? How could that happen? What might change from now until later that might change that opinion?
A. Some of that has to do with design, engineering design. And I'll have to defer the engineering design

criteria to Mr. Givens.
Q. Okay. This may be a better question for Mr. Givens, but you responded in your Rebuttal --- Surrebuttal to Ms. Blancato's request about wells specifically. And this --- do you have a plan for how to identify wells that are along the route of this line or is that a question for Mr. Givens?
A. As part of the environmental report that we prepared, there was public information used to identify those locations. Should there be wells that are not part of that public dataset, that is coordination that between the land team and the engineering team. As they have those conversations with landowners and they're identified, they will be flagged.
Q. Is there any plan in place on how to limit impacts to wells along the route of this line both during the construction phase and also the maintenance phase?
A. I will have to defer you to Mr. Givens.
Q. Okay.

COMMISSIONER RANEY:

I'm sorry, what was that answer?

A. I would have to defer to Mr. Givens.

BY ATTORNEY AUVILLE:

Q. Would you be the person to talk to about the response --- the Commission's request about the analysis

of the feasibility of utilizing the widened or widening the existing or Hampshire right of way? Are you familiar with that?
A. Yes.
Q. Were you the one who helped prepare that Answer?
A. I was one of the participants, yes.
Q. So circling back to the double circuiting, I have a couple questions about the response. The assumption that was made in the Answer that was provided is that the right of way would need to be extended a hundred feet one way or a hundred feet the other way and that would create too many problems. Is that a fair recitation of the Answer?
A. It's fair.
Q. And the assumption is it's an existing 150 foot right of way on the 138 line; is that correct?
A. We assumed 150 foot for this analysis.
Q. And the MARL line needs a 200 foot right of way; is that correct?
A. That is correct.
Q. So why wouldn't you just need to widen the right of way by 25 feet on both sides to accommodate double circuiting through this section?
A. Again, I'll have to defer you to Mr. Givens. I'm not the engineer who determines the right of way lists

for projects.

Q. Okay.

ATTORNEY AUVILLE: That's all I have. Thank you.

CHAIR:

Ms. Wilson. Mr. Hanna.

ATTORNEY HANNA:

Thank you, Chairman. This is the first word I said in two days. Excuse me.

CHAIR:

Do you need a drink of water?

CROSS EXAMINATION

BY ATTORNEY HANNA:

Q. Good afternoon. How much of the routing study was done remotely, like via maps and satellite data, written records versus on the ground, like in person? Just generally.

A. Generally, and it is typical of this nature to do a routing study based on the desktop information that was used as well as the data that we did collect from agencies, the LiDAR as well as field reconnaissance and stakeholder engagement meetings.

Q. Okay. Are you familiar with the route revision document that was filed? Well, I call it the Route Revision document, but on 7/30 --- July 30th, labeled

NEET MA Exhibit 3, Route Revision Supplement July 30th.
A. I am familiar with it.
Q. Do you know ---? Route Revision 3 was the one where there was a residential dwelling under construction. Do you know, do you recall if it was your routing team that identified that situation or how it came to --- be came to be known to NEET that there was a house being built under the line with a route?
A. Yes. So that house was not identified during the routing study, due to when we had the aerial imagery and the kind of data that was used for aerial imagery. My understanding from that is that the landowner had reached out to the land agent team and identified that they were building a home. And we worked with them, the company and team to identify a solution.
Q. How did the landowner reach out to the land agent if they weren't notified until July 30th, contemporaneously with that filing?
A. If I can get the route revision ---. Sorry, can you repeat your question?
Q. Yeah. In your Rebuttal Testimony, page 171, you mentioned that Route Revision 3 responded to NEET MA learning, in March 2026, that a property had been sold and the new owners were constructing a home within the right of way corridor?

A. That is correct.
Q. So the --- the July 30 filing that we mentioned before, the route revision supplement, it said that they were --- that the affected landowner from Route Revision 3 was being notified contemporaneously with that filing. I believe you said earlier that they --- the landowner reached out to the land agent. And I just --- I was curious how they knew who the land agent was if they hadn't been formally notified of the --- of the MARL project until July 30th.
A. As for the specifics of that, I will ask that I defer that to Ms. Powers. But my understanding is that as he sold his property, bought his property from a neighboring landowner, he was made aware of the project and reached out to a land agent.
Q. And then if this is another question for Ms. Powers, that's --- that's fine, feel free to defer. But do you know --- you said in your testimony that NEET MA learned in March 2026 about this, but then they weren't notified --- the new landowner wasn't notified in April along with everyone else. Do you know what the reasoning for that delay was?
A. Is there --- can you be more specific which property?
Q. Sure, the Revision 3 property. You're still

speaking about that. In your --- in that July 30 filing, it said that --- I'm sorry. In your Rebuttal Testimony, you mentioned that they --- that NEET learned about this in March 2026. And then in the route revision filing, Exhibit 3, it says that the new landowner was not notified during April 2026 with the rest of the affected landowners.

Do you just ---? Do you know why that delay, if they were made --- NEET knew about it in March, but they didn't receive notice in April with everyone else?

A. I will defer you to Mrs. Powers.

ATTORNEY HANNA:

Thank you. No further questions.

CHAIR:

Interveners.

MR. MYERS LANTZ EVANS:

Commissioners, my Name is Lantz Evans. I'm from Hampshire County and I am an affected landowner, my wife and I.

CROSS EXAMINATION

BY MR. MYERS LANTZ EVANS:

Q. My question here, I got several of them, back to the White Horse situation from ---. We have the 500 line, FirstEnergy line on our property right now, which you're going to come across part of our property or you want

to. And then you're going to hook up with the 500 line that's already there and go beside it.

You're going to run it down to Green Spring Road and you're going to veer off to the right and not cross White Horse. And if I understand you correctly, you said it was because of a request from Department of Natural Resources?

A. No. We --- as part of the proposed route, we do cross White Horse Mountain. They had asked for a minor route revision and that was what we were referring to earlier where they asked us to reduce the habitat fragmentation along their parcel and parallel the existing transmission line.

Q, So you are now going over White Horse beside the 500 line; is that correct? Is that what you're telling me?

A. The proposed project crossed White Horse Mountain already.

Q. Excuse me. Let me --- let me rephrase that. Are you going to go right beside the FirstEnergy 500 line that crosses White Horse Mountain now?

A. Sorry, yes.

Q. I'm really confused, because I know of at least three landowners that you're near the 138 line that's at the bottom of the White Horse and the veers to the right that next there is trying to buy the property to install

the MARL line.

I'm confused, because I was told originally the White Horse wasn't going to be crossed because it was a conservancy or the conservancy purchased the ground, then gave it to DNR. And then since it was State ground, they wasn't going to cross it.

But you're telling me now, if I'm correct, that it's proposed that the new MARL line is going to parallel the FirstEnergy 500 line right straight up over the mountain where it is now?

A. Yes, we've been paralleling the transmission line as the part of the proposed route, and that was filed as part of the application.

Q. I guess --- what did DNR ask you to deviate from or move from?

A. The request from West Virginia DNR was such that as we came over White Horse Mountain, we started to taper away from the existing line as we crossed over the river at the bottom of the hill.

Q. Yeah.

A. They asked us to hug the existing transmission line closer to reduce the habitat fragmentation on their property. So the project was --- has been already crossing White Horse Mountain as part of our filing.

Q. And you're going beside the FirstEnergy 500 line ---

cross overtop?
A. We are paralleling that existing transmission line to a certain point and then turning ---.
Q. Well, ---.
A. I don't have a map in front of me showing the area today.
Q. Well, I --- I'm really confused because I talked to the wildlife manager two weeks ago at my daughter --- my granddaughter's wedding that manages White Horse and he's not aware that that's the route that it's taken.

ATTORNEY PRESLEY:

I'll object at this point. She's answered the question.

CHAIR:

Sir. She has answered the question.

MR. MYERS LANTZ EVANS:

I'm sorry.

CHAIR:

If you have other questions, go ahead.

MR. MYERS LANTZ EVANS:

Yes, I would. One more question.

BY MR. MYERS LANTZ EVANS:

Q. If my farm was in farmland preservation, would you have to divert around my farm?
A. I'm going to defer to Mrs. Powers.

MR. MYERS LANTZ EVANS:

Okay. Thank you.

CHAIR:

Thank you. Next Intervener. Harvey. Haynes. I'm sorry.

MR. HAYNES:

Yeah, it's Mark Haynes, a landowner in Hampshire County. Thank you, Madam Chair and Commissioners.

CROSS EXAMINATION

BY MR. HAYNES:

Q. And Ms. Heater, thank you very much for what you're doing. Did you know that West Virginia ---? So I'm going to focus a lot on forests here for a minute, if that's all right. Do you know that West Virginia is the third most forested state in the union?

A. Not off the top of my head.

Q. Extra credit if you can tell me one or two, but that's all right. It is the third most forested. We're about 78 percent forested in this state, which is a very high percentage. Can you tell us what ecosystem services forest provide?

A. Can you clarify your question?

Q. You're not familiar with the concept of ecosystem services, which is in ---? Because you're in with

environmental services. I mean the concept of ecosystem services is a fundamental tenet or --- in the environmental world. What ecosystem services do certain environments provide? You know, I could help, but I was hoping you might.

A. Yes, I mean habitats provide ---.

Q. The forests in particular, please.

A. I'm not sure where you're going.

Q. Well, just the question is simply that ecosystem services ---? I could help, if you'd like. They are major sources of clean water. In fact, of all of the habitats ---.

CHAIR:

Okay, sir? No, ask her the question. If she doesn't know, then ---

MR. HAYNES:

Okay. All right.

CHAIR:

--- she doesn't know.

MR. HAYNES:

All right.

BY MR. HAYNES:

Q. Did you know that West Virginia's forests are a major source of our clean water in our rivers and a major source of our species of cooling in our habitats

or in our landscapes? They're a major factor in building soils from geologic rocks and so on. So they provide a lot of ecosystem services. You're familiar with that?

A. Yes.

Q. Okay. All right. Do you know how many acres of forests will be required to be removed because of MARL, if it's built?

A. If you give me a minute, I can look.

Q. Okay.

A. I believe it's about a thousand acres.

Q. Okay. So there are 279 properties that will be hosting these lines if it or the MARL line, if it's approved. How many of those would have ---? How many of those have forests on them and how many would have all or part of their forest --- their forests removed? Do you know?

A. I do not know the number of properties offhand how many are forested or not forested.

Q. That is --- okay. Okay. What --- what will ---? So forested land that forests that are taken out, what will replace those forests under the transmission lines, if they're built?

A. Typically it would be a scrub shrub type nature that could be allowed to regrow in that area. As far as

restrictions of that nature, I'm not the witness that can answer that.
Q. So forests --- you're familiar with the term forest succession, is that correct, what happens when you leave --- generally, when you leave land fallow, what happens to it through time?
A. I'm familiar.
Q. Yeah. What happens to it?
So I'm asking the question.
A. If it's left ---?
Q. If it's left alone, what happens in our area?
A. Other vegetation would occur within that area.
Q. Eventually grow in a forest?
A. No.
Q. Does --- if you leave land behind alone here, from meadow to shrubs to what comes next ---?
A. Are you asking in general or for the right of way corridor?
Q. I'm asking in general what happens in a natural situation when you leave --- when land is left fallow? What happens? So this is going somewhere. I'm asking for a reason.
A. Different environments will grow up within that area.
Q. I think the answer is it regrows into forest. It's

just, you know, a very natural process. So the question was, how or is from that, what will NextEra do to keep that natural succession from happening under the lines?
A. At a high level, I can answer that the right of way will be maintained. And how that will be maintained is another Company witness.
Q. Okay. But you can't speak to that at all?
A. No.
Q. Okay. Is that --- is another witness going to be testifying here?
A. Mrs. Powers.
Q. Okay. All right. Sorry, I didn't have an answer to that. Then I'll probably --- I'll defer a couple of other questions. You mentioned about fragmentation of forests.
A. Yes.
Q. So who cares about that? Why is that an important concept?
A. It is important to minimize effects to species and the natural environment. You want to limit whether or not you're disrupting the ability for species, for example, to move within their area of habitat.
Q. Okay. And there are other issues other than just species, but, yes ---.
A. Again, I said as an example.

Q. Yeah. Okay. When you do an evaluation, when an evaluation --- environmental evaluation for a project like this is done, you just come in and utilize the as-is condition and then go from there, is that correct, in terms of your evaluation of its impact on the environment? It's not like you reach back to a thousand years ago, but you did --- you know, this is the as-is condition and this is the impact this project may have; is that correct?

A. That is correct. We pull public datasets based on publicly-available information to assess what is currently there using aerial imagery and other such. And then we will, based on project facilities placement, determine the existing conditions to the proposed impact.

After the project is built ---. I mean, sorry, after the project continues to move through the process, we will, with voluntary right of entry, perform field studies to determine the accuracy of the publicly-available information for site-specific conditions. If we don't have voluntary right of entry, we can't determine what is on that property.

Q. Okay. Thank you. So there's also been discussion during these hearings about the Valley North line, which I would presume --- you know, which might follow this if

this project is approved or not. And what will the environmental experts in that project, you know, your analogs, I guess they'll take the as-is condition. So they'll assume they'll look at, well, this MARL line is --- might already be built. That's the as-is condition and we'll go from there. So that's --- the idea of cumulative impacts from a succession of projects is never really considered as these projects go on; is that correct?

A. I can't stipulate how another routing consultant would perform their analysis.

Q. Okay. All right. One other thing. Somebody mentioned that Dillons Run was mentioned here. Are you aware that's a native trout stream?

A. I am.

MR. HAYNES:

Okay. All right. Thank you very much.

CHAIR:

Any other Interveners? Just a minute. Ma'am, you can come on up. You go ahead and go first.

MS. SARAH EVANS:

I'm Sarah Evans. I have a farm in Hampshire County. Thank you for allowing me to speak.

CROSS EXAMINATION

BY MS. EVANS:

Q. Tag teaming on the forestry. If MARL is allowed to come through, where it will make its own line on us, it will cut woodland ---? When it comes alongside the existing powerline on us, it will cut woodland. And one of the letters that we got from NextEra, it said that woodland was undeveloped land. We have it in a forest program where we make money off of the forestry that's cut.

Every 15 years it's cut. Is there a plan for farmers or people that have forests for NextEra to come in and say, you would normally have made this much money, excuse me, off of this right of way, off of the woodland, we will make sure that you are reimbursed?

A. I'll defer you to Mrs. Powers, but that would be part of the land conversations you would have with her and her team.

Q. And all woodland, when you look at it, is considered undeveloped?

A. From the environmental analysis we did, woodlands are treated as forest cover. I'm not sure about undeveloped. Undeveloped has a different term in an analysis. So to us, woodlands is treated as forest cover.

MS. SARAH EVANS:

Okay. Thank you.

CHAIR:

All right. Next person. Linda --- is it? Linda Blanco (sic)?

MS. BLANCATO:

Thank you.

CROSS EXAMINATION

BY MS. BLANCATO:

Q. Hi, Ms. Heater. I'll be pulling my questions from your Rebuttal Testimony on page 12.

A. Okay.

Q. So your Rebuttal identifies property as 450 feet from the proposed center line. What point on my property did you use for that measurement?

A. As noted on page 12, we measured from the edge of the residential dwelling to the center line.

Q. To your --- to your center line on this property ---. Okay. And that's an accurate point or might this measurement vary?

A. As accurate as it can be. We used a GIS tool to measure the distance from the home edge to the center line of the project.

Q. Okay. That's where you mapped?

A. That is correct.

Q. Okay. So I'll be able to use that so that I can do my own separate measurements from my well to your

construction and so on and so forth, unless that center point changes?
A. That's accurate. You should be able to use that tool to assess that information.
Q. And would we be given any notification if and when that center point changes?
A. Should the facilities change, you would be notified and contacted prior to any changes.
Q. Okay. Okay. Great. Thank you. On page 33, lines 7 through 12.
A. Okay.
Q. Okay. You agree that the soil disturbance should be evaluated against an actual site topography and drainage; correct?
A. Soil disturbance for the project would be evaluated in relating to the Construction Stormwater Pollution Prevention Plan.
Q. Right. And who creates that report, you?
A. NEET MA. The Company and their consultant would develop that and submit it to the West Virginia DEP for approval.
Q. Okay. So a specific name you might have there?
A. At this time I believe that ERM would be supporting the Company in the development of that plan. But that could change. It's not been developed as we work

further towards construction.
Q. Okay. Let's see. I don't know if this is specifically for you. It might be for Mr. Givens. What measures will NextEra take to prevent construction runoff and sediment from reaching my property, which is downhill from your construction site. Any connections there?
A. So as --- as it's mentioned on page 33 of my Rebuttal, that is part of that Construction Stormwater Management Plan, which will have Erosion and Sedimentation Control Plan measures that is built into that. And that has not yet been developed.
Q. Okay. That has not been developed. But it will be developed before construction begins; correct?
A. That is correct.
Q. All right. And are they open to entertaining a site-specific survey --- they will come here?
A. If voluntary right of entry was granted, we could do certain environmental studies. But I would leave that to the Company to determine their commitments.
Q. All right. So I think you answered this. Has the land erosion control design you described in your Rebuttal been completed? And I think you said no, it has not?
A. It has not been completed yet.

MS. BLANCATO:

Okay. Very good. I'm finished with the question. Thank you so much.

A. You're very welcome.

CHAIR:

Thank you. Ms. Gruber, did you have questions?

MS. GRUBER:

Yes, ma'am, just one.

CHAIR:

Okay. You may proceed.

CROSS EXAMINATION

BY MS. GRUBER:

Q. Have the federal or state aquatic resource permitting reviews resulted in any change to the proposal the MARL route has, and any structures or access roads or work methods in Dillons Run area?

A. We are continuing to collect information as part of the project to be able to file our environmental permits which have not been yet submitted to the agencies.

Q. Do you have an idea when that will occur?

A. Maybe in the next several months. I'm not sure off the top of my head.

Q. Well, that --- will you need to be accessing the properties in order to complete that study?

A. We would need ---. Sorry. No, go ahead. Sorry.
Q. I was going to say, in other words, would we be --- should we be expecting a notice and then a request to access properties?
A. That is correct. We would perform environmental field surveys on properties where voluntary right of entry has been granted.

MS. GRUBER:

Thank you very much.

A. You're welcome.

MS. GRUBER:

Thank you, Madam Chair.

CHAIR:

Thank you. Other Interveners? Yes, sir.

CROSS EXAMINATION

BY MR. KEVIN EVANS:

Q. I went over a little bit of this yesterday about my property and trying to figure out how close it was to my house. In your Rebuttal, Ms. Heater, in your Rebuttal to me, Kevin Evans is my name. No relation to the Evanses that were already up here, unless we go back a ways, probably. But your Rebuttal to mine, when I said that the right of way was 41 feet from my house, you said it was 160. If I could just go over quickly how I came to my number. I went to the center line of the

existing powerline that is there. It's 150 foot wide and I measured 75 feet. That gets me to the edge of it. Now, you can't go any closer to that powerline, correct, the existing powerline?

A. I can't --- I don't have a map of your property to know the ---.

Q. Okay. If I have a powerline and I measure from the center of it that's 150 foot wide right of way and I measure 75 feet, I should be at the edge of it. You get that? Seven-five (75) feet is half of 150.

A. Yes.

Q. Okay. That's my starting point. I measured from there to my house was a hundred ---. I took a tape measure that was a hundred foot long, drove a stake in the ground and I measured a hundred foot and then did another stake. And I came out 241 feet from my house.

A. To the existing ---?

Q. To the existing powerline.

A. Okay.

Q. Edge of it.

A. Okay.

Q. Edge of it. And would your powerline be a hundred feet from there, the center line?

A. Our project would parallel that existing --- abut and parallel that existing transmission ---.

Q. Okay.
A. So from their edge of their right of way, ---
Q. Yes.
A. --- we would have 200 foot from there.
Q. Okay. And I had 241 feet to my house.
A. Okay.
Q. So that 160 foot thing, if you're doing that on the computer with ---?
A. So the --- the measurement here, 160 is from the edge of your home ---
Q. Yes.
A. --- to our center line and not the edge of the right-of-way corridor. So you would subtract a hundred from the 160. We would get 60 ---.
Q. So you're 41 to 61.
A. I understand. And from what the --- we have and not being on your property, we've measured from the edge of your home to the edge of our right of way.
Q. With the computer and satellite imagery, stuff like that; right?
A. That is correct.
Q. Yeah. Okay. You weren't down there with the tape measure?
A. We have not accessed your property.
Q. Okay. All right. I just want to make sure that

everyone knew that.

CHAIR:

Thank you.

MR. KEVIN EVANS:

Yes, ma'am.

CHAIR:

Are there other Interveners? Okay. We will take a 15-minute break and then when we come back, we will ask questions. And then Mr. Presley, you may do Redirect.

SHORT BREAK TAKEN

CHAIR:

Okay. Commissioner Larrick?

COMMISSIONER LARRICK:

No questions.

CHAIR:

Commissioner Raney.

COMMISSIONER RANEY:

Yes, ma'am. I've got a couple questions, Ms. Heater, I love your name.

A. Thank you.

COMMISSIONER RANEY:

Heather Heater, that's pretty good.

A. Married into this. Right? Didn't think through it.

COMMISSIONER RANEY:

I heard you earlier, you talking about this, but I think you maybe kicked the ball over to Mr. Givens about your baseline studies for wells.

A. For ---?

COMMISSIONER RANEY:

Did I hear you saying that you don't do baseline studies or you don't intend to or you haven't done them?

A. So to clarify, we use publicly-available information from data sources to identify whether or not there were any along the route. Not all of them may be mapped. Further information for those wells and where they might be located will be identified, I imagine, from landowners during conversations or during construction evaluations.

COMMISSIONER RANEY:

So as you get into it, you --- you may very likely when you think you're going to encroach on wells, then you will do a baseline study of them to figure out where you are or where they are?

A. They would identify them, yes, and determine if there needs to be any measures performed.

COMMISSIONER RANEY:

And I'll also ask if there was a law that governed that particular thing about the protection of

wells. And maybe that's what you said Mr. Givens could you speak to.

A. I'm sorry, a law? Is that what you asked?

COMMISSIONER RANEY

Yes, ma'am.

A. There may be a permit that might be required, should you impact a well. And I believe it might be, you know, identified on Ms. McCormick's Attachment 1 or 2, maybe.

COMMISSIONER RANEY:

And I think there is, I'm not sure. Having fooled around with the coal industry, I know that there's a requirement for them to protect the wells. And I suspect there is a --- maybe a little weaker requirement somewhere in the Clean Water Act or whatever with regards to protection of wells.

Let me go to your Direct Testimony, page 11. And at the very top, in line one, and goes on to two, says minimize crossing conservation easements. Tell me what that means.

A. There are properties that have been entered into conservation easements that might have restrictions on them.

COMMISSIONER RANEY:

Okay.

A. We have mapped those that are in public datasets or

been identified to us such that we would avoid crossing them, to the extent possible.

COMMISSIONER RANEY:

Let me jump Forward to page 43 in your Rebuttal. And you speak to Mr. See and Mr. Tritapoe and Ms. Trueblood regarding having grants or some easements of protection or being involved in programs that have some restriction on them. Is that getting into the same area of --- that I just asked about?

A. They --- they likely have different instruments that are placed on their properties versus a conservation easement.

COMMISSIONER RANEY:

But it's the same concept, ---

A. Similar ---.

COMMISSIONER RANEY:

--- that you would adhere to whatever those restrictions are or not you, NextEra?

A. The Company would work with them and, you know, determine, through conversations, what --- how to work with them on that, yes.

COMMISSIONER RANEY:

Okay. Page 17 of your Direct, you mentioned in this that it's 1,053 square miles, 95 miles west to east, and varied from 8 to 16 miles wide. I

read that and I thought, good Lord, why is it so wide? And I mean, you just want to paint it with a big brush?
A. Not necessarily. The reason is such that as you are provided what your endpoints are, you have to get from Point A to Point B, and you want to identify opportunities that will flow in the same directionality. And so in order to determine appropriate viable considerations, we determined that was an appropriate study area to evaluate. So it's just --- it's a larger area to work with and then provide options for proposed and alternative routes.

COMMISSIONER RANEY:

Okay. Nothing that required you to do that. You just felt like that was the right --- right thing to do. It just struck me that that's a pretty wide swath.
A. There's no requirement. It's determined by the routing team and us to say we can --- this will give us enough opportunity to determine alternative routes.

COMMISSIONER RANEY:

Now, let me go over to page 31 in your Direct. And my simple question is, you're talking about Alternative A. and you're talking about the other alternatives. But as it regards Alternative A up in the line four to eight, are there approvals in place for

these kind of things that you're talking about that are part of the Alternative Route A? I know they probably weren't at the point of your testimony, but have you since gotten permissions or approvals to do some of these things you're talking about?

A. Approvals you mean as it relates to those lines of crossing those state lands?

COMMISSIONER RANEY:

Yes, landowners and State lands and other things.

A. We are continuing to work with those land agents or landowners.

COMMISSIONER RANEY:

Okay. All right. Let me jump back now. Jump back over here to your Rebuttal. And I go to page eight. On line eight you talk about the proposed route has the second lowest number of unique landowners. What is a unique landowner?

A. So part of the assessment was identifying or obtaining parcels within the study area or along the alternative routes. There are landowners who own multiple properties. And so we took and consolidated down, the same landowner names to say they have a unique property, like one land ---.

COMMISSIONER RANEY:

So one person per one parcel?
A. Yes.
COMMISSIONER RANEY:
Okay. All right. It's a more simple explanation than I expected. That's good. Page 12, Ms. Evans talks about her forestry. And I think you probably adequately addressed that. That's in the Table there. Mentioned that a couple of times.
But on page 21 ---.
A. Of Rebuttal?
COMMISSIONER RANEY:
Yes, ma'am.
A. Okay.
COMMISSIONER RANEY:
Up at the top there, lines one down through line eight, I think it is, talking about all the different permits that are likely to be necessary. And it's your idea that these permits will be obtained before an expectation of a decision from us?
A. The timeline for those environmental permits, we are continuing to coordinate with them. I'm trying ---. I believe we'll be submitting those in the near future. In the timeline, I'm not sure how some of those will line up, but some may come after the decision.
COMMISSIONER RANEY:

So there's no preconceived notion about the fact that you need this Commission's decision before you apply for any of these permits?

A. I do not believe that's the case. We can proceed with --- once we have attained all the environmental field study information necessary for those applications.

COMMISSIONER RANEY:

I'm sure it would be good to have some of those permits in place. I think they would help our effort here. Pages 35 to 40 in your Rebuttal Testimony talks about the Lake O'Woods' concerns. And as was talked about first thing this morning, all of those apparently have been adequately addressed by the Company and you and whomever else has been in conversation with ---?

A. That is correct. We are working through the solution that was identified this morning with them.

COMMISSIONER RANEY:

Okay. All right. I asked you about page 43 and the resolution of those concerns, but you've answered that, too, because of the specific programs to that end. So thank you very much, Heather Heater. Thank you, Madam Chairman.

CHAIR:

Thank you. You talked about or Mr. Presley talked about the concerns that Ms. Blancato had. And I think I understood your testimony that her concerns were going to be addressed by other agencies?
A. The concerns that she raises, we will be developing a project-specific Erosion and Sedimentation Control Plan as part of the Stormwater Pollution Prevention Plan. So there will be best-management practices developed for the project for the right-of-way corridor. And so as part of that application and submittal to DEP, that would be addressing some of those concerns of hers.

CHAIR:

Have you or anybody from NextEra met with her and told her that these concerns were going to be addressed at some point?
A. As far as landowners' position, state of conversations, I can't address that. That would Mrs. Powers, but the information that was submitted to earlier testimony is the first time I personally saw it.

CHAIR:

Okay. Thank you. I don't have any other questions. Mr. Presley.

ATTORNEY PRESLEY:

Thank you, Your Honor. No Redirect.

CHAIR:

Okay. May this witness be excused?

ATTORNEY PRESLEY:

Yes.

CHAIR:

Okay. Thank you.

A. Thank you.

CHAIR:

Do you want to call your next witness?

ATTORNEY PRESLEY:

Yes, the --- the applicant calls Phil Givens to the stand.

COURT REPORTER:

If you could please raise your right hand.

PHILLIP GIVENS, HAVING FIRST BEEN DULY SWORN, TESTIFIED AS FOLLOWS:

DIRECT EXAMINATION

BY ATTORNEY PRESLEY:

Q. Good evening, Mr. Givens. Could you please state your name and business address for the record?

A. Philip Givens, 700 Universe Boulevard, Juno Beach, Florida.

Q. And how are you employed?

A. I'm Senior Transmission Project Engineering Manager

for NextEra Energy Resources.
Q. And in that connection have you been involved in NextEra --- NextEra's certificate application, which is the subject of this proceeding?
A. Yes, I have.
Q. And did you also prepare Direct and Rebuttal prefiled testimony?
A. Yes, I did.
Q. And you have that testimony in front of you?
A. Yes.
Q. Are there any corrections that you need to make to that testimony to make it truthful and accurate?
A. No.
Q. Do you ask that your prefiled testimony be adopted as your sworn testimony in this matter?
A. Yes.

ATTORNEY PRESLEY:

The witness is available for Cross, Your Honor.

CHAIR:

Mr. Hanna.

CROSS EXAMINATION

BY ATTORNEY HANNA:

Q. Hello, Mr. Givens.
A. Yes, sir.

Q. I'd asked questions of Ms. McCarthy early yesterday with respect to the number of jobs that the construction, if this plan is approved, will bring to West Virginia. And her testimony, you know she was deferring to you when I had questions about that. She --- in her testimony, she estimated that MARL will provide an estimated 200 to 300 construction jobs within the State of West Virginia during construction. Are you familiar with that estimated number?

A. I've heard that number.

Q. Is that --- that's not a number that you came up with?

A. I did not come up with it, but we did get some input from Quanta Infrastructure Services Group, Solutions Group, Quanta, we'll call them. They were working with the E and C team to inform us about construction issues. And I remember seeing some information from them about a breakdown of labor by several categories that had percentages that would be provided by a contractor and local labor. And it wasn't just labor, it was also materials and rental --- equipment rental.

Q. There was a --- in Ms. McCormick's testimony there, there was another number about an estimate of 400 to 600 total construction jobs. Are you familiar with that number?

A. I've heard that number.
Q. And is that this ---? Would your answer be the same about whether you came up with that number?
A. It's --- I think it's the same source.
Q. Were you involved in whatever work needed to occur to make those estimates?
A. Our witness, Mr. Deskin, is testifying to that information. So he was provided that information. He's the one that did this study that I think you're referring to.
Q. Is it your testimony that he estimated that those --- that this project would result in that number of construction jobs or ---?
A. No. My understanding is that information was given to him and so those estimates were utilized by him to determine economic benefit to the area.
Q. But to your knowledge, Dr. Deskins did not come up with those estimated construction job number?
A. I believe he was given them. But you could ask him.
Q. He was provided with those numbers?
A. I believe so.
Q. Okay. You have a copy of your testimony in front of you? I'm looking at page 36 of your Direct, Bates Stamp 003048.
A. I'm on page 36 of my testimony.

Q. Okay. There's a question ---. The first question at the top of that page. Does NEET MA expect to use union labor for construction of the MARK project. States that the NEET MA expects that the contractor will make reasonable efforts to utilize local labor to supplement its established workforce coordinating with local union halls.

A. Page 36, you said?

Q. Yes.

A. Okay.

Q. And I was reading from lines four through seven that NEET MA expects that the contractor will make reasonable efforts to utilize local labor to supplement its established workforce coordinating with local union halls. In addition, some of the construction work will likely utilize nonunion labor. Did I read that correctly?

A. Yes, sir.

Q. Can you --- can you explain how --- how does --- how NEET MA and on the construction side we go about utilizing local labor?

A. Well, we're going to --- we're going to issue the construction work to a construction company. And our expectation is that they're going to need to resource some of the material that they need for construction,

equipment rental as well as labor to local sources.
Q. And is there any --- do you confirm whether or not any of those contractors or third-party contractors are or employ or employees or contractors are West Virginia labor or come from suppliers from West Virginia?
A. I don't --- I'm not aware that ---. First of all, we haven't established the bid list yet for that, for the construction effort. But I'm --- I'm not aware of any of the companies that I'm familiar with being West-Virginia=based. But these big companies that we're going to need for this project likely have people in the state or in the region doing maintenance work or other work for the existing utilities.
Q. You wouldn't be able to say here specifically the number of folks that are --- reside in West Virginia or outside of West Virginia?
A. No, sir.
Q. I would assume that --- and it's fair to say that when you're hiring job or hiring contractors or obtaining supplies for a potential project like this that covers four states, you're not necessarily looking at state boundaries or there's nothing state-specific. It's really --- you're including the job as a whole. Is that accurate or ---?
A. It would be contracted for the entire transmission

line project.

ATTORNEY HANNA: Okay. Thank you. No further questions.

CHAIR:

Mr. Harkins.

ATTORNY HARKINS:

No questions for me. Thank you.

CHAIR:

Ms. Grundmann.

ATTORNEY GRUNDMANN:

Yes, Your Honor.

CROSS EXAMINATION

BY ATTORNEY GRUNDMANN:

Q. Mr. Givens; is that correct?

A. Yes.

Q. Okay. You are employed by NextEra Energy Resources, not NEET MA; is that correct?

A. That's correct.

Q. Okay. And in response to some questions from Mr. Hanna, you just indicated that you had not yet gone out to bid who your contractors would be --- but the contractors of whom you are aware are not West-Virginia-based, is that correct?

A. I'm not aware of any contractors that are West-Virginia-based, but that doesn't mean they aren't.

Q. Okay. And you're aware that at present one of your sister companies, NextEra, has proposed to acquire Dominion Energy in particular; is that correct?
A. I'm aware of that.
Q. Are you aware that as part of the commitments to seeking approval of that transaction, that NextEra has made certain representations about commitments to Virginia, labor in Virginia, and other commitments with respect to its ability to leverage its existing supplier relationships to provide benefits to Dominion's ratepayers in order to convince the Virginia State Corporation Commission to approve the merger?
A. Well, I've read things that they put out for the employees to read, but I don't --- I can't swear that all those details were in the emails that I received.
Q. I guess I'm not surprised that they didn't fully summarize all their testimony for you in your employee emails. Are you aware of any of the aspects that I just recited to you or any of that you details provided?
A. I have read that they're --- that they're looking for ways to --- to help the --- the people of Virginia and Dominion's territory. That's about as far as it goes.
Q. And part of this project is in Virginia; is that correct?

A. Yes.
Q. And so have you had any internal discussions about favoring potentially Virginia contractors as part of that related merger commitment that's been made?
A. No, I --- my job is not affected at all by the merger.
Q. Oh, you're aware, are you not, that I think NextEra has committed that it would no longer compete with Dominion with respect to transmission projects in Virginia if the merger were approved. So that would affect your job, wouldn't it?
A. Right now the merger hasn't been approved and I have received no direction whatsoever regarding Dominion.

ATTORNEY GRUNDMANN:

Okay. Thank you. No further questions.

CHAIR:

Mr. McGhee?

ATTORNEY MCGHEE:

No questions, Your Honor.

CHAIR:

Mr. Stephens.

ATTORNEY STEPHENS: Thank you.

CROSS EXAMINATION

BY ATTORNEY STEPHENS:

Q. Good afternoon, Mr. Givens. I'm Bradley Stephens,

representing County Commissions and Ponderosa Pastures Corporation. I'll try to be very brief, maybe for a change. I have to ask you, because I'm not clear of my recollection of your testimony because I'm not intimately familiar with all of it. Did you make the call or will you make the call on what kind of conductor is used on the MARL line if it is constructed and placed into operation?

A. We've already determined the conductor that's going to be used for the project.

Q. Okay. When you say we determined it, are you part of that group, but not the sole person who determines that?

A. The decision on what conductor to use was --- was made initially in the proposal phase. And it was a conductor option that provided the right line impedance characteristics and current rating that satisfied the requirements that solved the problems for the PJM was placing.

Q. So that was presented to PJM as part of the RTEP process, this is the conductor that we would use if --- if you select it in the RTEP process. Right?

A. I don't know if they --- if we spelled out what specific conductor that we were using, but they --- I assume that our planning group had provided them any

kind of modeling data that they needed, the impedance information. I wasn't part of the proposal, so ---.

Q. So you're coming in late, they're telling you what conductor to use. So you don't really have any leeway in influencing a potential change in the conductor ---?

A. Well, when we --- when we were awarded the project, the --- I'm in the execution engineering team, so the process is that there's a proposal team. When we're awarded a project, it comes over to the execution team.

So in that process, we were considering, you know, should we consider other conductor options? But the --- but there was no incentive, I guess, or no reason to change the conductor. And changing the conductor might have affected the load flow, it might have affected the ability to solve the problem. So we did not modify the conductor selection.

Q. So essentially, oversimplifying, probably, but different conductors have different properties as to their transfer capability impedance, things like that, electrical characteristics, right, depending on the materials used?

A. Right. There are different conductor options that could have been considered.

Q. So is the conductor that was selected, is it an aluminum conductor, was steel supported --- essentially

steel supported?
A. Right. ACSR steel-reinforced.
Q. Okay. Would there be another conductor that is more conducive to permitting reconductoring in the future? In other words, are there characteristics of different conductors that lend them to be more easily-removed, if you could deenergize the line, permitting more rapid reconductor in the future?
A. I wouldn't say that's --- that's one of the considerations in selecting the conductor. If we had --- say I was asked to do a reconductor project for an existing line, that's the way you would look at it. Okay, I've got this existing line, now I know something's got to change. What conductor can I replace the existing conductor with, with the minimum amount of impact to the line?
Q. Is it fair to say that cost per linear foot of the conductor is a factor in any kind of proposal to construct and operate a high voltage transmission line?
A. That's true generally, but in this case the --- it was more the conductor option that provided the impedance that helped to solve the problems that the PJM had.
Q. For a nonelectrical engineer, could you explain what impedance is?

A. Well, it's the --- it's what resists the flow of energy. I guess you could think of it that way.
Q. So otherwise voltage is --- can be think of --- thought of as the pressure, essentially. So impedance is going to sort of choke off the pressure, to some extent, depending on the impedance?
A. Right. Ohm's law for voltage equals current times resistance or impedance. So the higher the impedance, lower the current can flow.
Q. They vary inversely, basically?
A. Right. There's more to it than that, but that's --- I think that helps to ---
Q. Straightforward ---. Okay. Appreciate that. Are there other conductors available in the marketplace right now that would provide greater transfer capability and still meet the impedance requirement you're --- you're assuming to refer to?
A. When you say transfer capability, what do you mean?
Q. Well, I understand transfer capability on high voltage lines to --- they have an assigned rating in PJI --- PJM assigns and recognizes a certain rating on each line, depending on conductor material as part of it operating voltage, things like that. Isn't it right that it's either what an MVA or MVAR rating on the lines; right?

A. I just wanted to make sure that's what you were talking about and not ---. It's different from how the power flows on the line.
Q. Sure.
A. I'm not talking about the rating of the conductor.
Q. Sure.
A. There are high temperature, low SAG conductors. We routinely evaluate those for projects, composite core conductors, ACSS conductors.
Q. So do --- those composite core conductors, are they less prone to SAG than an ACSR conductor?
A. They --- they have --- because they're lighter weight and because the composite core is --- it doesn't expand or contract very much with changes in temperature, it's --- it has lower sag. It also has higher tensions than an ACSR conductor.
Q. So it could potentially be used in the MARL project, that ---?
A. It could have been.
Q. So it's a foregone conclusion, the conductor is selected, there's no changing it ---?
A. Well, there was --- there was no ---. I would say there was no need to change it. There was nothing that would make the project less expensive or there was no need to provide additional rating, because the conductor

rating was approximately the maximum of other equipment that's in series with the conductor. And the composite core conductors are expensive.

Q. So a lot of it comes down to cost per linear foot at the end of the day. Right? Is that safe to say?

A. It's part of it.

ATTORNEY STEPHENS: Okay. I believe that's all I have, Mr. Givens. Thank you.

CHAIR:

Mr. Auville.

CROSS EXAMINATION

BY ATTORNEY AUVILLE:

Q. So there's significant overlap between you and Ms. Powers' testimony. So if I'm asking you questions that would be better directed to her, please let me know. Okay?

A. Yes, sir.

Q. I'll start with the Vegetation Management Program. Would that be something that you would be able to answer or is that better for Ms. Powers?

A. That's Ms. Powers. I know some things about the vegetation management practices, but she's the witness for maintenance of the transmission line.

Q. Okay. Okay. So what about wells? Would that be yours or Ms. Powers' ---?

A. The questions that I've heard so far on wells, I can answer those.
Q. Okay. So there's two potential impacts to wells. From my understanding, there would be potential impact during the construction, where possibly the well could be compromised, due to the construction activity. Is that --- is that a potential problem?
A. Well, that's ---. I think that's what people are concerned about. There --- I'm not aware of activities that we're going to do that would be impacting the well. But in the --- but from my understanding, these are things that would be part of the environmental permit. The environmental agencies are concerned about these things. We're concerned about water quality.
Q. But that doesn't mean this Commission couldn't be concerned about impacts to landowners either; right?
A. Correct.
Q. Just because some other agency has concerns doesn't mean that this Commission can't have concerns as well.
A. I don't mean to imply that. It's not that we're not concerned. I'm just that these --- these concerns are addressed through the permitting process is what I'm trying to say.
Q. Okay. So you said you don't know of any activities. Do you plan to do any blasting when --- when you're

installing the foundations for these towers?
A. Right now we have no plans for blasting.
Q. Okay. So during the operation of the --- the line, you will be selectively using herbicides; is that correct?
A. In the construction of the line?
Q. No, in the --- in the operation and maintenance of the line.
A. That's a question for Ms. Powers.
Q. Well, it was also a potential impact to wells, but I'll move on. So this is definitely --- at page 11 of your Rebuttal you mentioned and talk about stray voltage. Can you explain to the Commissioners what that is and why that's a concern?
A. Okay. Stray voltage means different things to different people. But to IEEE, the Institute for Electrical and Electronic Engineers, they have a standard that defines these terms. And so stray voltage would be the result, let's say, induction on metallic objects as a result of the natural --- the normal function of an electrical facility. So it's not something that would be say a fault condition or bad wiring in a home. That wouldn't be stray voltage, the way the IEEE defines it.
So for us, recognizing that the transmission line

has an electric field, it has a magnetic field, the electric field can induce voltage on metallic objects that are within the right of way or close to the right of way. And so that voltage, say it's a fence or maybe it's a metal trough, there could be an induced voltage on it. Typically, they're very low voltages and they're easily mitigated. If that voltage is too high, then it might create a current.

You know, somebody touched it, there would be voltage. You've got a resistance across your body. There'd be some current running through your body. You may feel it, you may not. Kind of like you touch your refrigerator, your oven door. These things are in an electric field, you don't feel it.

Q. So to put that in layman's terms, you could potentially induce electricity across metallic objects that are in or close to the right of way. And maybe I use the wrong term, but there could be shocks or electrification, to use a simple term of metallic objects, close or in the right of way?

A. Electrical location sounds scary to me. There --- there are things that can be mitigated.

Q. And so, I mean --- and in your testimony, you say that you're going to --- that you would ground any object within the right of way that could potentially

hatch stray voltage. Is that correct?
A. That's correct.
Q. Is it a problem just in inside the right of way or can it potentially be outside the right of way?
A. It could be outside the right of way, but we have control of the things that are within the right of way. So working with --- in cooperation with the landowner, concerns that they have are things that we see that we think would be a concern, we would deal with that.
Q. Sure. Is there any sort of specific commitment that you could make before this Commission right now in terms of --- because it's a little vague in your testimony, work with landowners. Is there a specific distance from the right of way that you think should be grounded to mitigate potentially that impact before the line is electrified?
A. I --- I think that's a case-by-case thing because it depends on what the object is, how close it is to the line. There --- you know, we've done this on past projects. I recall a project in New Mexico where there was a landowner that was concerned about his home, had a metal roof. He was several hundred feet from the transmission line. This was a 345 kV line. It was evaluated there was not enough voltage on that roof to require any mitigation.

Q. But you --- you do commit to working with landowners to address those concerns?
A. Yes, sir.
Q. On page 41 of your Direct, you discuss that during the routing that you all tried to maintain a buffer to habitable structures to limit EMF exposure. Do you remember that testimony?
A. I remember that.
Q. Is there a specific buffer that you all used or is there more detail on what that buffer is?
A. No, I think I explained that in discovery. But the right of way itself is a buffer. And we're not saying that there was a required buffer due to EMF, some distance that we have to maintain from the transmission line. That wasn't what we were trying to convey. But in the routing study, we were --- you know, one of the criteria was to be --- was distance from homes. And it was an end-to-end route. And we were looking at the statistics across the route to try to determine which route had the least homes that were close to the right of way.
Q. So the buffer would be the right of way, basically. Is that correct?
A. That's correct.
Q. Okay. And on page 15 or your Rebuttal, you discuss

the levels of EMF and magnetic field at the edge of the right of way. Do you remember what those levels are?
A. I believe that --- if you could point me to it. But the electric field, I think, is 1.71 kV per meter. The magnetic field, under an everyday kind of load, is --- I want to say 46. It's 47 milligauss, 146 milligauss for 142.
Q. So those two numbers, the --- the first one is what would just be like the average operation of the line, what you would assume on a normal day would be the magnetic field; is that correct?
A. Yeah.
Q. And then the five year peak is what --- under heavily-loaded conditions, what it would produce or what you would estimate the field would be?
A. Well, the mag --- the electric field is the same, but the magnetic field is affected by the amount of current, right.
Q. Right. Okay.
A. So it's --- it's an everyday case, kind of a daily load type of situation. And then the peak five year peak load. And we --- that's what we provided.
Q. Do you know what those numbers --- the magnetic field number would be at say 200 feet from the center line as opposed to the edge of the right of way?

A. Not off the top of my head.
Q. Okay. And you wouldn't know what it would be at 400 feet either, obviously?
A. No, but I ---. It may be that our witness, Chris Ollson might have that information.
Q. Okay. Did you hear me ask Ms. Heater about the potential of double circuiting for short spans?
A. I did.
Q. Is that something that's, from an engineering standpoint, feasible?
A. I would say first of all that our project was a --- it was bid and awarded as a greenfield project. If you're asking me conceptually, is there a way to build this double-circuit line, yes, there's --- I could conceive of some ways to do that.
Q. Would you be the correct witness to ask about the response to the feasibility of widening the Gore-Hampshire right of way?
A. By widening ---?
Q. It was a --- it was a study that the Commission requested and --- and was filed with the Commission. Would you be familiar with ---? Could you answer questions about that?
A. I can.
Q. Okay. So to --- to simplify it, the options that

were presented were, we needed to widen the right of way either a hundred feet to the north of the line or the south of the line. And the assumption was, is that it was 150 foot right of way and that MARL, as a 500 kV, would need a 200 foot right of way.

So --- and I believe, and you can correct me if I'm wrong, but the assumption was this double circuiting in this area is what you were looking at. I'm curious as to why we wouldn't just need 25 feet on both sides of Can you explain that?

A. Can you ---? Do I have that ---?

Q. And if you're not the right witness, that's fine. If you think --- if you think Ms. Powers would be more likely to be able to answer that question, I can ask her.

ATTORNEY PRESLEY:

We can direct you, Mr. Givens. It's page 19 of Kaitlin McCormick's testimony or Rebuttal Testimony.

A. Bates Number 25, from there ---?

ATTORNEY PRESLEY:

We can give you a copy of that filing if it's --- if it's helpful.

A PAUSE IN THE RECORD WAS HELD

BY ATTORNEY AUVILLE:

Q. So maybe let's start this way. Actually, let me give you an opportunity to look over that a little bit, so you can refresh yourself. I'm sorry. So let's --- let's start here.

Would a double circuited 138 500 kV configuration in the horizontal configuration, we'll start there, which is what was discussed here, would that need a 200 foot right of way or something wider?

A. It would need at least the 200 foot right of way.

Q. And I understand there may be considerations why it would need to be wider, but generally it would need a 200 foot right of way; is that correct?

A. In the horizontal face configuration, yes.

Q. Yes. And in the --- the assumptions that were made in this filing that was made before the Commission was that there was an existing 150 foot right of way for the existing 138 line. So my question is, why wouldn't the right of way just need to be widened 25 feet on both sides of the that line as opposed to a hundred feet on one side or a hundred feet on the other? Because those are --- in constrained areas like this, that could make a significant difference; is that right?

A. It could.

Q. So shouldn't the study have been to widen it by 25 feet on both sides and say what impact that would have

on the route?
A. That would have been an option.
Q. Okay. I'll move on. So just --- just one more question about this. This is a ---. You assumed --- whoever did this assumed a horizontal configuration of the --- the double conductoring. There's also the ability to do a vertical configuration. Are you familiar with that?
A. Yes sir.
Q. So my understanding is, is that --- are you familiar with Potomac Edison's Gore-Dobbs-Goose Creek portion of --- that's the extension of this MARL line?
A. I haven't seen what their design is, but I know that we have a handoff point under there.
Q. So I will --- as it has been explained to me, they are going to double conductor for the whole 44 mile length of that using the existing 138 right of way. And since it will be in a vertical configuration, it will require no widening of the right of way. Does it look like that? Why was that not considered as part of this study that you provided to the Commission?
A. I --- I don't know.
Q. Okay. I mean --- so I mean there are some engineering issues with it. Never mind. I'll just move on.

A. I would like to --- to explain a little bit here.
Q. Yes, sir.
A. Before I came over to NextEra Energy Resources, I worked on projects that were brownfield projects. These are projects that --- where you have existing lines and you're having to --- maybe the structures need maintenance, pole needs to be replaced, something like that. Or could have been projects where you're conceptually wanting to rebuild the corridor. We --- in that case we owned or we had the easement company that we own the line. So we have control over that.

So if that were the scenario, where we have control, we'd have to think about how we would progress that existing line to be a double-circuit line. And I think, Dr. --- if we're just talking about the 138 kV right of way, then we have to establish what --- what's the opportunity to be able to deenergize that line without adversely impacting customers or creating some situation where --- where their electrical services at risk. So I don't know much about this line. I know there's a substation at Gore. For some reason FirstEnergy chose that point to the east of that substation. I think I have an idea why, but haven't talked to them about that. I don't know where other substations are, where you conceptualize the lines.

These are things that we would have evaluated in my former job with our operations team, system operations, to see what --- what are the outage windows that we can work with? Usually there were some significant restrictions to the outages and that impacts what you can do, how long it takes to do it. And that may be feasible. It may not be. You may have to just transition over a long period of time.

Q. Sure. Potomac Edison has figured a way to do it on --- to deenergize 44 miles of their existing 138 to make it happen. So it is possible it might just be a little more work.

A. I heard yesterday, though, that they still haven't filed their CPCN.

Q. That's correct. Just one more question. From an engineering standpoint, do you think that there's any --- outside of just the edge of the right of way, that there's any distance from a 500 kV line where consideration should be given to the impact to a home, for instance, 120 feet from the center line? Should there be some consideration given to that landowner? And what I mean by that is mitigating the impact to that landowner, homeowner, in ways such as offering to purchase the home or finding ways to move that line further away from that home ---? Say for instance, if

it's an existing, paralleling, existing right of way to double circuit in the vicinity of that home.
A. That's --- a commitment like that would have to come from our development team. That would be --- Kaitlin McCormick would have to make that commitment. I can say from an engineering point of view, putting the emotions aside, which I know is kind of hard to do, but from an engineering point of view, we would be compliant in that situation with the National Electrical Safety Code. And if there were any issues with stray voltage, they could be mitigated.
Q. Can you remind me again the, the heights of the towers that are being proposed?
A. The tower heights range from 85 feet to 190 feet.
Q. So potentially the home could be closer --- the tower could be taller than the distance to a home and it would still be within NERC criteria? I'm sorry, I used the wrong --- within the Electrical Code?
A. There's no governing Code that I'm aware of that would require that there was a --- an issue raised by one of the Interveners, Ms. Keiver, I think, about the HUD fall-down distance.
Q. Yeah, I think that's like half the distance of the tower or something; is that correct?
A. Right.

Q. So if our tower is less than 200 feet, the --- HUD would find the --- the fall-down distance for that tower is half of that hundred feet, which would be the edge of the right of way. Maybe one more thing.

ATTORNEY AUVILLE:

Hold on just a moment, please. Actually, that's all I have. Thank you.

CHAIR:

Mr. Hanna.

ATTORNEY HANNA:

Thank you.

CROSS EXAMINATION

BY ATTORNEY HANNA:

Q. So Mr. Stephens took a few of my questions about conductoring, so if you could just entertain me. And I am not an engineer. So from your point of view, for --- for a layman's perspective, is it fair to say that advanced reconductoring is essentially upgrading old transmission lines with new conductors with new lines that can handle more load?

A. Yes.

Q. As opposed to advanced conductoring being building it that way from the start?

A. Well, let's ---. Let me back up a little bit. So advanced conductor, there --- there are states that are

creating language to define what that is. And maybe Maryland, I think, might have that. There's other states that I've seen that are putting that as a result of, for Order 1920, talking about advanced technologies that need to be considered.

So advanced conductors can be used in a variety of situations, but they're --- I would say they're best suited for a reconductor project.

Q. Okay. So they're --- new transmission lines or projects like the MARL project are --- they don't use advanced conductoring in --- in those, typically?

A. I wouldn't say that. But they're ---. Now that that FERC Order is in place, when we do our initial conductor option assessments, we're looking at advanced conductors as potential solutions to the projects that we're proposing.

But for the MARL project, this was prior to that. And the conductor option that we utilized solved the problems that PJM had. And there was no advantage --- tangible advantage that we could see to using advanced conductors on the new project.

Q. Okay. Oh, go ahead. I'm sorry.

A. If you want to understand, though, why --- why it works so well on existing lines, I can explain that.

Q. Well, I do, maybe. I guess what --- what I'm trying

to understand, this is --- this is a 30,000 foot view question. But you know, the --- the totality of the evidence and testimony that's come in, you know, from, from NextEra and PJM shows the future capacity forecast should just say growth, growth, growth, like all in bold. I mean, there's the data centers, the alternatives to MARL that MARL's chosen over or being applied for now before MARL's even through the state regulatory process. Right?

I mean, the retirements are being reversed. We've heard about the Valley Link or, you know, Valley North transmission lines coming in. So I guess just generally speaking, it --- if you can build a new transmission line now that can handle more capacity in the future, why --- why not do that and --- and avoid the mistakes?

I don't want to say mistakes, but from what Dr. Abdulsalam had testified, that there were these widespread violations that were, you know, essentially so egregious they couldn't reconductor some of the old lines because you'd have to shut them down to do it. And that would cause even more violations. And why not build them fancier now, if --- to use, again, a layman's term, so that, you know, in the future you don't have to start from scratch?

A. There's a lot to answer in this question. So first

of all, what Dr. Abdulsalam said, he had that interstate analogy, remember that you have congestion and we need to build a new highway.

So increasing the line rating on one of the existing lines doesn't accomplish that. To me it's like widening the lane on the existing highway. That doesn't help with the --- with the congestion, but maybe it makes you feel a little more comfortable as you're driving in a wider lane. It doesn't accomplish what this need that they had for a second path west to east.

And it doesn't --- the conductor capacity doesn't change the physics of the load flow. What that does is, in my understanding, when they --- in planning, when they evaluate these NERC conditions, N minus 1, N minus 2, these different things, where they're looking at loss of one element or loss of a --- things like that, then that load has to be transferred to other transmission facilities.

And that additional load can be --- can cause the conductor to heat up beyond the maximum temperature that it was designed for. That creates problems with clearances. It creates issues with the health of the conductor. So that has to be controlled. We have to control the amount of current that flows in the conductor to keep it from overheating.

So on the MARL line, as I explained a little earlier, the conductor, by itself, isn't the only thing that's carrying the current. It goes from substation to substation. And so the conductor connects to other things in the substation, to switches and breakers and jumper conductors, to the --- you know, transformers, bus, whatever it is.

And so any of those elements could be controlling the load flow. So in this case, the --- the rating for the MARL line is maybe a hundred amps less than what the substation breaker is rated for. So if the conductor could carry 8,000 amps and the breaker could only carry 5,000, that you're stuck. You're not going to get more than 5,000 amps. Does that make sense?

Q. It does. So the limited bioconductor, I read up on that, is that essentially the limited bioconductor lines, if it's the capacity of the --- of the --- it's restricted by the physical capabilities. Is that ---?

A. Well, let me --- let me explain it like this. So NERC back I think around 2007, maybe before that, there was a major blackout somewhere, probably near here, somewhere in the northeast. And because of that, NERC got concerned about facility ratings. And so every utility had to establish facility ratings, they call it, according to a set of criteria that they define and they

have to have documentation on it.

So for a transmission line facility, we would define that as from say the bus connection of one station to the bus connection of another. So there are relays, there are CTs and breakers, switches, jumpers, different electrical elements that are in series with the transmission line.

And the facility rating for that line incorporates all those things. And NERC says that you have to --- you have to identify the limiting element in that facility rating. I hope that makes --- that explains it. It's not just the conductor, it's all the other things.

Q. All the other components. Okay. So it does make sense. Thank you. I guess so it ---. You said in this one, you guys did not --- you guys, NextEra, did not consider advanced conductors on the MARL project. So when it was submitted to PJM, those --- that was not in there; is that ---?

A. Not in the upfront evaluation, to my knowledge. But the --- we did, like I said, we, we thought about modifying the conductor after we won the project, but some of the options that we thought about would have changed the line impedance and it would have changed it in a significant way, that --- what wouldn't have

satisfied the --- the solution.
Q. Okay. Yeah, so that was my next question, was ---. I guess, I think it was --- Mr. Colley testified that the next year's bid was selected. It wasn't necessarily because it was the lowest cost, but it was the best electrical solution, I believe he said.

So you're saying that if --- if that same solution had been presented, but you were using the advanced conductoring instead, it would have --- it wouldn't have necessarily been the best or would have ---? Is it --- is it a cost issue or is it more of a physical impedance issue?
A. It's --- the impedance of the line would be impacted by let's say the diameter of the conductor of these cross-sectional area of aluminum in the conductor, the number of conductors per phase and the phase spacing height above ground. These things are all factors in determine the impedance of the line.

So it's not inconceivable that you could have the same phase spacing, the same three conductor bundle, same Casey mill size conductor, but with a different core that would qualify as that quote unquote advanced conductor. But there are tradeoffs there, too. There's the cost. ACSS conductor sags more so conduct --- the structure heights might be higher. The composite core

conductors that we consider, they're costly. The cost is coming down over time. We considered them in some --- some other ISO proposals.

Q. So you have that --- that flexibility? Like generally speaking, is that something you have to go to PJM for approval of a change like that? Like once you got the bid, if you say you had decided to, you know, reevaluate and do --- you know, use different conductoring or whatever, is that something ---? Would you go back to PJM and ask if they still --- if you still get the bid?

I guess I'm just sort of trying to understand the product ---. Like is it your choice or is it --- is it PJM's choice ultimately with something like that?

A. Well, the discussions that we had about that, I was told that we would have to go back to PJM and have them reanalyze our option and agree to the change, that it didn't adversely impact the material impact, the result.

Q. Sure. So last question. I don't want to cause any --- any animosity between you and PJM. So this is just between me, you and a fence post. But from your own --- from your --- from an engineering perspective point of view, yours, you know, given the --- we'll say the unique nature of this area, what did they call it, Data Center Alley, you know, the east to west ---? I mean, we're

pretty much due west of --- of that area where the MARL line is going in.

It seems like there's a lot of growth there. Is there no ---? Is there no reason to have a bigger highway built now in --- you know, to sort of an ounce of prevention's worth a pound of cure type of thing? I mean, are they not going to need more.

And if they're building it now, again, I mean, I know like you said you might have to reduce some substations and things like that, too, to handle a higher load, but in the end is that more complicated and/or more expensive than just building it bigger now, like to start from scratch, say two years, you guys are back in here, another transmission owner's back in here building another one and contacting landowners and all that. Now you've started from scratch again. So I guess that was sort of a long rambling question.

But if you had the reins there at PJM, would you build an Autobahn, a giant highway, right now or would you do a piecemeal this way?

A. Well, I think Dr. Abdulsalam explained that. Right? There's a need now almost immediately to have a solution. The MARL line is that immediate solution.

And delaying, I guess, that it's, you know, that option, I imagine NextEra would be happy if --- if they

awarded us a bigger project with bigger scope, you know.

Landowners might not like it, maybe impact them a little more. But that's not our decision. PJM evaluated that. They feel like this is the solution, that there are some other things that they need to do that they explained, other west-to-east paths that need to be established.

Q. So this is --- it's --- a narrowly tailored solution to these problems is the MARL line; is ---?

A. Well, he --- Dr. Abdulsalam, I think he said that he did not study this project as a 765 kV project, but I believe he also said that he didn't think that that would be necessary. I'm not a planner. That's --- I don't do power system analysis. That's not ---.

ATTORNEY HANNA:

I understand. I appreciate your time. Thank you. Nothing further.

A. Okay.

CHAIR:

Intervener. Yes, sir.

MR. HOCKMAN:

Thank you, Commissioners, Mr. Givens. Hi, I'm Brian Hockman. I'm a landowner in Hampshire County, West Virginia. I'm also a retired electrical engineer. So we can talk shop, if you want.

A. Okay.

CHAIR:

Please don't.

CROSS EXAMINATION

BY MR. HOCKMAN:

Q. Okay. So I just had a few questions. So you --- your title is. You are Senior Transmission Project Engineer. So yeah, I had some questions that maybe you can answer. I'm hoping that you can, because the MARL line is coming across my farm. I do have cattle. So I do need to know what to do when these towers come. So I was trying to find out what is the process for mounting one of these towers.

So the first thing I'd like to know is like, well, we're talking about the horizontal steel lattice towers is what they're the four leg, what they're going to put in, what will those footers look like? And what kind of holes am I going to have in my ground? I know that they can vary depending on the soil and the height of the tower, but can you give me a range of as far as diameter and how deep that these things can go?

A. That was provided in our exhibit. Let's see, where is that? I don't want to get it wrong. I know that. I think I did see that in the library ---. But for the folks, the diameter of the foundations, let's say for the

tangent structures, these are the structures that have no line deflection angle or minimum line deflection collection angle. They're the lightest towers that we have. Those structures would have I think the ranges on flat land, 24 by 24 footprint. And it --- but as they get taller, the spread increases. 24 is the minimum. And then I think it ranged up to I want to say 50 feet. Is that ---?

ATTORNEY CALLAS: Are you looking for the exhibits, your Direct --- they're right in front of you.

A. Oh, yeah, you told me that.

ATTORNEY PRESLEY:

Yeah. I believe Mr. Givens is on, possibly on Bates Number 3059 is where that attachment begins.

A. Right. So the --- like I said, the tangent structure, that talking about flat ground. Okay. Which we don't really have. But look, it makes the math. Twenty-four (24) foot squared up to 50 foot squared. And the --- depending on the tower height. And the foundation diameter would range between three and five feet. And it could be 15 feet to possibly 30 feet each.

Q. Fifteen (15) to 30 feet?

A. That's the tangent structure. That's the most common one. And then we can go to the more extreme end.

Q. Okay.
A. Okay. The dead end structure, that's the most beefy one. That's the one that would say turn a 90 degree angle. It's got a lot of load on it. That's going to be the biggest structure. So that would have foundation sizes that range from five to eight foot diameter and could be 20 feet deep to, I don't know, we say 60 feet here.

I think that's probably ---. But they would have to be deeper than what the tangent structure has. And then did I say what the footprint was? So that the --- the spacing would be 27 feet to 68 feet.

Q. Okay. So and then typically, I mean, I know that depends, too, on --- on the terrain. But what is it like the typical span between towers?
A. The average span, I believe, was 1,200. Excuse me, 1,258 feet.
Q. And usually the time frame for when you start construction is like say we're starting from scratch and we're building the right of way and we're clearing trees, we're clearing land, we're drilling holes, we're pouring concrete and we're putting towers up. How long is that land going to be compromised before I can run cows back on it again?
A. Well, the --- the entire construction window is two

years.
Q. Two years?
A. Right. But that --- I don't think that means that on your property that we're going to be there every day for two years. I know that's not what it means.
Q. Well, no, you're talking about the length of time. Yeah. Because you've got weather conditions and stuff like that. Yeah. So I mean, it could --- it could draw out longer. I mean, if you put a stopwire clock on it.
A. Right.
Q. It could draw longer than that. But I mean as far as the --- the man hours you're talking about probably like two years?
A. That's the --- well, that's the total span of construction. So there --- you know, on your particular parcel, I can't hold say how --- you know, how much time there would be between each activity. So if you got pasture, we're not going to be clearing there, but we might need to do some right-of-way prep still or, you know, then we would start installing foundations. Structures would come sometime after that.

Conductor would be installed after that. So there would be periods of time possibly where there's no construction activity on your parcel.

And Ms. Powers can probably speak to this, too. You

might want to ask her this question. But in general, we, you know, we have projects that go through ranch land, almost say, you know, cattle country, you know, Florida, we built them in Texas, all over the country. And we work with the landowners to make sure that they, as I explained in my Rebuttal Testimony, too, to notify them when we're going to be on the property and what activities that we're going to have. So these are things that could be coordinated with their ---. If there were, you know, if our planned time was going to be, you know, a problem for you, then you would explain that through the land agent back and forth to the construction people and we would figure out how to --- how to work out something that works for both of us.

Q. So do you have any idea ---? I mean, you talked about the ACSR conductors. So do you have any idea how many on that MARL line will be per phase?

A. Three. Three per phase.

Q. Three per phase. Do you know what size wire that's going to be? I mean, MCM-wise or ---?

A. 1,780 KCML.

Q. 1,780.

A. It's a pretty big conductor.

Q. Right. Have you ever done the math on that to see how, what kind of weights between towers?

A. Well, not in my head, but yeah.
Q. Fun fact. It's almost over ten times between towers. So it's just --- it's a lot of weight, if you think about that.
A. And there are --- there are advantages to this conductor, not just the current-carrying capacity. But because it's three conductors per phase, because it's a pretty large diameter conductor, this helps a lot with audible noise, which I understand was an issue with the existing 500kV line then.
Q. Right. And also telephone PSC there brought up a point about the --- the component values that you guys run into, which dictates your wire size. And I was thinking, you know, if you're building a new line, you're tapping into a substation. Why --- why wouldn't you have ---? Because you're going to have to add ---. You can't just --- you're going to have to add components so that once that line comes in there. You would think that you would go ahead and rate those for what you would need. And if you needed to use some sort of enhanced conductors that carry a little bit more current than the 1780s, would --- that you would go ahead and buy those breakers and do that.
You know, you wouldn't just dedicate and say, well, we're going to build this line, but it can only carry

this much current, because we're going to this substation and it's only got, you know, this size breaker. So that's --- that's as high as we can go on that you would think that since it's new and you know that they do that.

A. Well, I don't have the substation engineers here, but I did ask them about that, and I don't think that there's a 500 kV breaker with a higher rating than --- than what we have. And if there is, it's probably really hard to get.

MR. HOCKMAN: Okay. All right. Yeah, that's really all I want to know. I appreciate it. Thank you.

CHAIR:

Next Intervener. Mr. Campbell, if you sat in the middle, you wouldn't have to get up there, you know.

MR. CAMPBELL:

It keeps me awake, so ---.

CHAIR:

Commissioner Larrick. Oh, I'm sorry. I've gone a day and a half without doing --- messing up here, so Mr. Hanna.

ATTORNEY AUVILLE:

No, Your Honor, there's a couple people on

the ---.

CHAIR:

Okay. So I didn't really miss it. Okay. So, Intervener, do you want to ask your questions?

MS. BLANCATO:

Sure. Linda Blancato.

CROSS EXAMINATION

BY MS. BLANCATO:

Q. My questions are that of an adjacent property owner downs lope from a construction site. I'm going to refer to Rebuttal ---.

A. I can barely hear you.

Q. I'm sorry. Can you hear me now?

A. That's a little better. You're downhill from the project. I got that far.

Q. Right. I'm downhill from the project. If you would turn to page 20 of your Rebuttal. And I see that it's an intention to include perimeter controls like fences and be cautious toward the steep terrain and near environmentally-sensitive areas. My question is, where --- will there be ongoing monitoring of the erosion controls, land movement and any related construction damages, especially to the adjacent property owners' property?

A. Well, the --- the best --- we call them

best=management practices or BMPs that are part of the permit requirement. And we talked about the Stormwater Pollution Prevention Plan, which we call a SWPPP, if I can just call it that, instead of saying the whole thing, save a little time.

So the SWPPP defines what countermeasures or what best practices need to be implemented at different --- for different conditions. So in some places a silt fence would be installed to prevent water running into a creek or some wetland. There might be wattles to control water flow. You know, and other countermeasures like that would be installed. They'd be specified as part of the permit conditions.

Q. And ---? I'm sorry.

A. During the construction of the line, those --- those things would be installed as soon as we can get them in. So if they have to be installed before clearing, they would be installed before clearing. There may be cases where, you know, that would be installed after clearing, but before any kind of grading was done. So those would be installed and there would be periodic checks on those best practices to make sure that they're still doing --- serving their function until we're done with construction and we achieve full restoration.

Q. So follow-up question on that. Can I get a copy of

what those best practices are? Can you point me in the direction of where I could acquire that?
A. Well, when we --- I suppose when we get our permit, if --- if we were required to, we would ---. I don't make these commitments. Okay? I'm just the engineer. But we would have --- at that time we would have defined what those BMPs were. Probably be filed publicly available, I would guess.
Q. Okay. And would someone come around the neighborhood to check and see around your construction site if there is an area of concern?
A. You mean where --- where things weren't functioning like they were supposed to?
Q. Yes.
A. We would be --- we would have people onsite through the course of the two year construction effort. There would be land agents that the landowners could contact if they identified some issue that needed remedy. Those land agents would make contact with our construction managers and we would ensure that if there was an issue that it was remedied.
Q. Okay. And there would be guarantees put out there before construction started?
A. What do you mean by a guarantee?
Q. That we can expect if something does break, you will

come and fix it.
A. As --- Sarah Powers, our next witness, she can verify this. But I believe as part of the Easement Agreements, we cooperate with the landowners. I mean, there is a --- there is an agreement there with the impacted landowners, for sure.

MS. BLANCATO:

All right. Okay. I'll save those questions for her. No more questions. Thank you very much, Mr. Givens.
A. You're welcome.

CHAIR:

Are there other Interveners?

MS. GRUBER:

Yes, ma'am. It's Kristi Gruber again.

CHAIR:

Yes, proceed.

MS. GRUBER:

Thank you, ma'am.

CROSS EXAMINATION
BY MS. GRUBER:
Q. Sir, can you tell me, are --- is NextEra a government contractor?
A. Is NextEra a government contractor?
Q. Yes.

A. No.
Q. Okay. Would you consider putting in the construction RFP, Request for Proposal, to include a percentage of the labor, materials, and equipment equivalent to the percentage built --- being built in West Virginia, since we represent the largest portion of this route, and we don't really get anything else out of this? So would you be able to talk about how you're going to hire these contractors?

But it sounds like you have deals that maybe will hire Virginia contractors or hire Maryland contractors. But is there a way that you can give us a percentage that is proportional to what's going through West Virginia to be built by West Virginians or to be providing materials or the equipments, all of that, in that equivalency?

ATTORNEY PRESLEY:

I'm going to object. I think Mr. Givens made himself clear that he's --- he's just the engineer. He's not necessarily authorized to make these commitments that --- that are being asked for.

MS. GRUBER:

Well, he talked about ---. He was the one that was responsible for the proposal to be sent out to get the contracts for construction. That's why I'm

asking.

CHAIR:

Mr. Givens, can you answer that question?

A. I --- as I said before, I'm not in a position where I can make commitments for the Company, but if that were a condition of certification, we would certainly comply with that.

BY MS. GRUBER:

Q. Thank you, sir. I'm going to bang around here because I have questions that keep getting sent to different people. So the guide wires for these towers, will there be any? And you talked about that there's a foundation or will they need to have guide wires as well?

A. We have no plans for guide structures.

Q. All right. Thank you. So when you're putting these towers, and you said the foundations are anywhere from 15 to 60 feet, essentially, and anywhere from three to eight feet round, to get those foundations in, will you be doing drilling or will you be doing digging? You said there's no blasting; correct?

A. No blasting. So I would call it drilling. There's, you know, drill rigs, augers. The drill bits are appropriate for whatever the soil profile is.

Q. Okay. And you need to be on bedrock. Your

foundations need to be on bedrock?
A. No, ma'am. Did you hear me?
Q. No, sir.
A. No, ma'am.
Q. Okay. Thank you. Also in --- when we were talking with Ms. McCormick, she referred to you. And so the use of --- the use of the right of way by the landowner ---. And we've talked about grazing animals. And she also talked about we could use it for row planting and recreation. Who is the responsible person for the maintenance of the row? Is that the landowner or is that somebody that maintains the main --- the transmission line?
A. After --- after the line's constructed, you're saying, who maintains it?
Q. Yes.
A. Ms. Powers would answer that question.
Q. Oh, okay. Okay. Are you responsible for restoring the land or is that Ms. Powers, too?
A. After --- well, construction is not over until we've reached full restoration.
Q. And does the restoration go per phase or is it all at the end?
A. Well, when we're done with construction and a certain area, and we no longer need to traverse the

right of way for a construction purpose, then we would begin restoration. But the restoration will continue after the line's constructed, ensuring that where we receded, that we reached --- I forget what the term is for this. But I just want to say it's not full restoration, but final compliance stage.

Q. Okay. So you said everything was going to be done in stages. So you would come along and first you would clear the trees. So then that leaves open soil, essentially, because nothing's holding that soil in place.

And then the next phase, you would come in and you would do the drilling. And then you would pour the concrete. And then you would put the towers on, and then you would bring the lines in.

So are we waiting basically two years from the time you first enter our property ---? We're waiting two years for you to restore that property?

A. Well, there was a ---. First of all, there's a step that I might have left out that you left out. And that would be developing the access to the structure locations and structure pads and these temporary impacts that we have.

But we would --- on a particular parcel, I can't give you a time frame when we would be done. I just

know that throughout the course of construction of the whole line, it's going to take two years, and we won't be necessarily on a parcel every day for that two years. There would be periods of time, possibly, between different activities.

Q. Correct. But you wouldn't ---? So you wouldn't come in and cut all the trees down. Then you're not going to restore the land there and then come back in and dig it up to put the drilling in. You're just going to leave it as it is from the time you start it; right? You're not going to do any restoration in between your phases of construction?

A. We would likely not start the restoration until the end of that construction process, because we may need to go back to an area to do some follow-up work or do inspections. We're going to need that access until we're done.

Q. All right. Thank you. I want to talk about aquifers. A lot of our wells are only 60 feet down. So if you're coming in and you are drilling 60 feet down and you hit an aquifer, do you have any plans in place to what --- what do we do when that impacts us?

Is that --- is that coming out somewhere in a --- in one of your best practices or something?

A. This would be part of the process that we go through

with the environmental permitting of the project.
Q. Okay. All right. Thank you. And --- okay. And then you talked about coming in to start, you have to have access road. So you talk about the State roads.

What about private roads? Is that a separate contract with the private road owner? And as you're coming through these private roads and damages are done because they're not used to heavy equipment coming through, does that road get repaired as it has damage to it or is that a two-year waiting period as well?
A. Thank you for bringing this up. So let's start with once we get off the main roads, let's say, and we're on the arterial roads that are probably controlled by the --- by the county. We would have Road Use Agreements with the counties.

You know, basically anything we do probably requires a permit or permission from state or local authority having jurisdiction. So as I explained in my Rebuttal Testimony for those roads, we would do some baseline inspection, understand the condition of the road, make improvements that are necessary. And then that --- those roads would be maintained until we're done.

For a private road, then I guess the, the owner of that road would be basically the authority having jurisdiction. And for those --- if there are private

roads that we plan to use, we would do improvements on them to widen them, make them more stable, if necessary. And then those roads would be maintained until we're done with them, and then they would be restored.

Q. Thank you, sir. Just a couple more questions here. I know you're getting tired. Should changes related to the measurement from the center line occur, what --- what kind of notice can the landowners expect to be given and what process ---? You know, what would the process be that the landowners? Would they be granted a review of those changes or would they be allowed to file any objections or anything like that?

Like you've moved --- you've moved lines based on objections. So if this gets changed and suddenly it moves, the gentleman that talked about 41 feet from his house, if that --- if that row gets moved slightly, the center of the row gets moved and now the row is now five feet from his house, does he get to file an objection?

And does something happen that --- does he get something --- changes for him, that --- because you made a change? And how do we find out that you're making those changes?

A. Well, Ms. Powers can answer this question, but I know that these things that you're bringing up, they're also addressed in the easements.

Q. Okay. Thank you. And so is there a law or regulation that codifies where and how measurements are taken from, you know, these center lines or the end lines or all that? Is there something that we can look at that has all of that identified?
A. Are you asking if we have some public submission of where the center line of the line is?
Q. Well, you're measuring --- throughout all these testimonies, they've talked about measuring from the center line and whether we're, you know, three feet from the, from the row or whether we're 30 feet. And it all depends on where the center line is.

So basically you have --- you've already laid out on my property 200 foot. Well, it's 220 feet, actually, where this row is going to go, where you're planning on putting these --- the towers and the transmission lines.

So if you change that, based on your construction, you come along, you say, well, there's this thing here, we need to move this ten feet to the right. And so, therefore, my 220 becomes, you know, 320 on one side, and are you going to give me the five feet back from the other side? I mean, how is that ---? Do you just keep taking land so that I'm within that 220 --- your tower is within the 220ft. How do I ---? You know, is there something that tells me how that works?

A. Okay. I want to make sure I understand what you're asking. So if --- if we have a 200 foot right of way, let's say that we're not changing the span length, we're just shifting the right of way. You want to know if the impacted landowner would know that we're making that shift and then how close our center line is to something their --- their home or something that they're ---?

Q. Yeah, two things there, sir. The one is, how do we know if you're moving your center line? And then the second question is, are these --- all these ---? You've been talking about so many feet from a house, so many feet from, you know, a well, so many feet.

We've been talking about all these special measurements. Is there some place that regulates those that we can look at or is that just ---? How did you come about with that, that this is significant, that the well is within the row or outside the row?

Q. I'm just trying to find out if there's something that. That tells us what those are, then we can just go look it up.

A. I don't know the answer to that, where --- where these are publicly available. I know that we're in the process of ---. In the CPCN process, we've already submitted several route revisions for the Commission to consider. Haven't approved those yet. I don't know who

to defer to here on where --- where this information would be available. I'm not the one to answer that question.

MS. GRUBER:

All right. I appreciate that. Thank you. I believe that's all I have, ma'am. Thank you very much. Thank you, sir.

A. You're welcome.

CHAIR:

Are there other Interveners, other questions? Okay. Commissioner Larrick.

COMMISSIONER LARRICK:

No questions.

CHAIR:

Commissioner Raney.

COMMISSIONER RANEY:

Yes, ma'am, I've got a couple. Mr. Given, nice to see you late in the day. I go to your Direct Testimony on page seven, lines six through eight talked about neat NEET MA plans to utilize the services of NextEra Energy's integrated supply chain for procurement and equipment and services and so forth and so on for this project.

Do you anticipate --- does the Company anticipate availability of equipment problems or

availability of material problems that --- once you initiate this?

A. Yes, sir. Commissioner Raney, we have anticipated those things. We ordered substation equipment for our Woodside Substation quite a while ago. We have a lot of projects that we do across the board. You know, we show here that we --- in 2024, we procured over $16 billion in materials. So we're --- we're taking a long view of --- of this equipment. It's more impactful for the substations because transformers are stat comms. These kind of things are very long lead items.

COMMISSIONER RANEY:

So talking months, years?

A. Years.

COMMISSIONER RANEY:

Years. Okay.

A. So, you know, they have to be ordered quite well in advance. And so we have a pipeline of those things with transformer suppliers, with breaker suppliers, with different suppliers. The transmission line material is not as long lead, but there's a lot of demand right now of the suppliers. There's --- you know, the growth of the transmission grid is impacting that. These --- what do you call them, hyperscalers, the mega data center people that they're ---. I hear they're procuring their

own equipment and material for their projects and so they're gobbling up capacity.

So we --- we spend a lot of time and thought with our supply chain people identifying these issues and making sure that we're out in front of it.

COMMISSIONER RANEY:

Thank you. And the --- go to your Rebuttal Testimony. And on page 11 we spoke with someone earlier about the stray voltage and some of the things surrounding that. This particular thing is the question that's on line 11, 11 and 12 of page 11, that Ms. Evans --- Ms. Sarah Evans in Ms. Donna Brooke talking about stray voltage and Ms. Evans talking about the effect it had on the horses. Ms. Brooke on --- I don't guess the specific, but at least your testimony doesn't indicate anything specific.

But talk a little bit about that, because the answer seems to discount Ms. Evans' concern as it regards horses. Then I don't see anything addressing Ms. ---. So is --- is there more to that than what that answer ---?

A. Well, I surely didn't mean to discount Ms. Evans' concern, but she described it as a neighbor who built a barn 400 feet from a 500 kV line, and the horses would not drink from the buckets or troughs, I'm assuming, in

the barn. Okay. So 400 feet away from the transmission line. The electric field at that level is almost zero.

So the --- unless this has happened ---. You know, I've been doing this for 40 years now. So it's possible that if there were a distribution line that's say right next to the 500 kV line or transmission line, along the right of way ---. It's possible for the --- if they're parallel for long enough, close enough that the magnetic field from the transmission line can induce a current in the neutral voltage, neutral of the distribution line and that increases the voltage at the source of supply where they're providing power to the home.

Okay? But that would be really unusual. That's the only way that I can conceive of that the transmission line could impact something like this situation. So more likely from all the reading that I've been doing about this, it's a serious issue up in Wisconsin. They have dairy farmers up there.

The PSC in Wisconsin actually established some rules for dealing with stray voltage concerns where the service provider would have to do an investigation, go to the home, do tests, figure out what's causing the spirit voltage. So it's more likely that there's some kind of wiring issue in the barn that's creating a voltage and these, you know --- the trough or whatever,

the buckets --- well it's something is ---.

COMMISSIONER RANEY:

It's curious, because I think Ms. Brooke --- at least her family, I think, has a dairy farm, so ---. And I'm surprised that it doesn't mention any concerns as regards that in here.

But I guess what I'm looking for is, suffice it to say, and I respect that, should you have these kinds of situations, which you do have to here, that there be further investigation to try to solve the, the stray voltage problem if it is, in fact, causing concerns. Is that accurate?

A. I take these things seriously. I hope I didn't imply otherwise. Yes. So there are ways that you can investigate what's causing the stray voltage issue and there are ways to mitigate it.

COMMISSIONER RANEY:

That's what I was wondering about. I certainly hope that's the case and suspected it would be. You know, you --- I don't know, someone early yesterday morning kind of threw you under the bus as it regards the blasting plans and damage to wells. And of course we had a lot of discussion about that all the way --- all the way through.

And I'm curious. You said there's not

going to be any blasting unless --- you don't plan to have any. So that's easily taken care of. And the damage to wells gets into all kinds of baseline quality and quantity things and things which I'm sure you're aware of, at least you've talked about it today. So you want to take care of that.

But I'm wondering, with all the expansive experience that you all have had across the country, has there been a requirement for bonding? You all have to provide a performance bond, as you embark upon constructing the line to say that, look, here, I'm going to --- here's a bond, make sure that we're going to do what we say we're going to do, to the satisfaction of the landowners?

A. I don't know that ---. I wouldn't necessarily know that. But as far as I know, on any transmission project that I've ever worked on, I don't recall there being a bond requirement. I think sometimes for the generation projects there might be a different ---.

COMMISSIONER RANEY:

All right. The last thing I've got is I go back to Mr. Head's --- and I'm still struggling here a little bit. And I can't say the doctor's name, Absalam (sic).

A. Abdulsalam.

COMMISSIONER RANEY:

He's not in the room, so I'm going to embarrass him. I'll call him Sammy. That's right. You know, the lawyer yesterday gave us a great practical explanation as to what this bidding was and how it worked about.

And as I understood, that PJM sent out a bunch of violations. and violations in my mind, or at least as I understood them, are things that need to be fixed.

And you and others stepped up and said, look here, we think this is the way to fix it. What Mr. Head was talking about, why did you all come in with a 500 kV line and not a 765? Or was PJM not as open and flexible as everybody wants to believe that they are? And they said, look here guys, we want you to fix this, but we want you to fix it with a 500kV line, and then we're going to jump right back on the train and come back in here and want a 765?

A. I'm trying to remember if ---. Well, you're talking about the MARL, the solution that they chose. Why, why isn't that a 760?

COMMISSIONER RANEY:

Well, let me ask it this way. Was the 500 kV your own solution or was that a solution that was

suggested by PJM?
A. No, this was --- this was one of the many solutions that we proposed in that window. And it's one that they found best satisfied the problems that they were having.

COMMISSIONER RANEY:

As Mr. Head was talking about, did they have any discussion with you all at the outset of that to say 500 is okay, but we're going to have to have more stuff here in a little bit, so we're going to have to go back and plow this ground all over again? Was that an early discussion or is today the first day we had that discussion?
A. I wouldn't have been in on those discussions. I'm not aware of any. I don't recall that there were those discussions.

COMMISSIONER RANEY:

I'm just trying to figure it all out. But that's --- I was curious about all this. Thank you, Mr. Givens. I appreciate you late in the day. And yes, Madam Chairman, thank you.

CHAIR:

I'm going to have to review the transcript, but I do not think that Dr. Abdulsalam --- I think he agreed that perhaps the 765 line made more sense, but somehow or other it became a 500 kV line.

I'll have to review the transcript, but I'm not sure that he didn't say that a 765 line would make more sense. And so I'm just really struck by if we're planning ahead, why would we not be planning for more growth rather than planning for what's right in front of us?

A. I think PJM's going to have to answer that question. But I know that they --- the industry used to have a shorter window that they looked at for planning. And FERC, I believe, in their Order 1920, required that they look farther out 15, 20 years, I believe. So now they're looking out ahead.

PJM in their --- in their model, they --- they tell us what the problem is. They give us a certain time frame to come up with solutions, both solutions that --- some of the other ISOs do it differently.

CHAIR:

Is it more complicated to construct a 765 than a 500?

A. I wouldn't say --- my opinion, it's not more difficult. But the right of way might have to be wider to be able to, you know, comply with all requirements at the edge of the right of way, let's say maintain blowout and clearance to the edge of the right of way. So, you know, that's one thing that might require more effort to

establish the right of way.

It's --- they're bigger structures. So you know, there's --- I think people are concerned about the --- the voltage level and understand that I --- in my mind, it's just another kind of structure. My engineering head, I'm not worried about it. I could understand why my --- my daughter or my --- you know, my wife might be concerned about something like that, so ---.

CHAIR:

Okay. Thank you. Mr. Presley, do you have Redirect?

ATTORNEY PRESLEY:

Just a little bit. Won't take long.

REDIRECT EXAMINATION

BY ATTORNEY PRESLEY:

Q. Mr. Givens, you were talking about stray voltage and you said you that EMA would be able to mitigate that within the right of way because NEET EMA would control that area; is that correct?

A. Right.

Q. But do you think it's fair to say that any concerns about stray voltage diminishes significantly the further away you get from the line in the right of way?

A. I believe I said that. I hope I said that.

Q. Okay. And you were asked some questions about

the --- from the CAD, Mr. Auville, about NEET MA's analysis of the feasibility of utilizing or widening the existing Gore-Hampshire right of way. Do you recall that discussion?

A. Yes.

Q. Okay. And I think there was a lot of focus on, you know, the reason why it couldn't be done was because you had to extend the right of way. But would you agree that there are several other reasons why that would be problematic?

A. Why rebuilding the line would be problematic?

Q. Utilizing or widening the existing Gore-Hampshire right of way ---. If I could direct you to ---. I mean, you talked about it a minute ago, Kaitlin McCormick's testimony. Do you have that in front of you?

A. Her Direct Testimony?

Q. Her Rebuttal. Sorry.

A. Okay.

Q. And she lists out several factors as to why this route can't be taken or this --- using the existing right of way is not an option. Do you see that?

A. What page are we on?

Q. Page 19 of Ms. McCormick's Rebuttal.

A. Okay.

Q. Yeah, I'm just going to --- we don't have to go through all of them. It's --- it's already in the record via her testimony. But do you have any reason to disagree with --- with those reasons as to why it's not feasible to take this approach?

A. No.

ATTORNEY AUVILLE:

I'm going to object to the form of that question. The testimony, first of all, speaks for itself, but feasible is probably too strong a word. Maybe it's more difficult.

BY ATTORNEY PRESLEY:

Q. The study that we submitted or the response to the Commission's Order was the analysis of the feasibility of utilizing or widening the existing Gorham-Hampshire right of way.

A. I can go a little further with some of the problems that I see with this scenario, if that's okay.

Q. Sure. Yeah, go ahead.

A. Okay. We --- we had a project that we did in Kansas and the Kansas Corporation Commission was concerned about our route was parallel to an existing 161 kV line. And they wanted us to evaluate double circuiting that 161 kV line.

We did not own the right of way. It was another

utility. We didn't own the line. And so they --- they ordered the two companies to coordinate to try to develop a plan for, you know, how --- a concept for how we would rebuild this line and add our 345 kV line to it. We would have a double circuit line, basically.

And this was --- even six months into trying to coordinate with this other utility, we --- we weren't really getting to a solution.

Why is that? Because, you know, there were debates over, well, what --- what structure type are we going to use? Are we going to use the --- the NextEra structure or the other utility structure? And then what components are we going to use? What kind of poles or structures are we going to use? Who's going to maintain them, if something goes wrong?

There's --- you know, there's a lot of issues with when we don't own the facility with how we're going to rebuild that and coordinate the effort. So in the end the --- the KCC just said, you know this --- there's a lot of issues here. So they allowed us to --- to build our line adjacent to the existing line.

But one of the things that they did to --- after that project was to work on establishing rules for line routing. So they --- they put in some requirements for routing transmission lines.

And one of the things that they were concerned about, same thing that some of the people here are concerned about, is that we gravitate towards existing linear facilities. And they --- as I recall, that was one of the things that they were trying to fix is to make sure that people weren't unduly impacted by those kind of issues. They want to sit parallel property lines as much as possible.

I forget all the, you know, specific things, but I'm sure it's public. That was one of the things that --- that they did after the fact to try to help with this situation.

We don't own that facility the 138 kV line or the 500kV line that were parallel to ---. We don't have authority to go take over the right of way.

ATTORNEY PRESLEY:

That's all the questions I have, Your Honor.

CHAIR:

Thank you, sir. You may be excused. All right. Let's go off the record here for a minute.

OFF RECORD

CHAIR:

Okay. We are going to recess for today. We will start with Mr. Boykin tomorrow. And I'm going

to remember, you get ten minutes, you get two questions. And you get two questions.

OFF RECORD DISCUSSION

CHAIR:

Okay. Thank you all. See you in the morning at 9:30.

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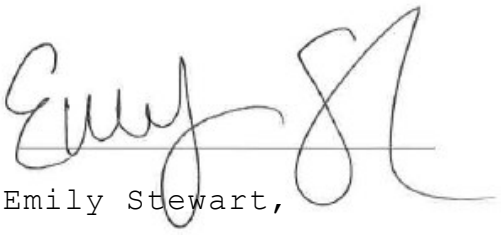
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CERTIFICATE

I hereby certify, as the stenographic reporter, that the foregoing proceedings were taken stenographically by me, and thereafter reduced to typewriting by me or under my direction; and that this transcript is a true and accurate record to the best of my ability.

I certify that the attached transcript meets the requirements set forth within article twenty-seven, chapter forty-seven of the West Virginia Code.



Emily Stewart,

Court Reporter