

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

- - -

In the Matter of the :
Application of Ohio Edison:
Company, The Cleveland :
Electric Illuminating :
Company, and The Toledo :
Edison Company for : Case No. 14-1297-EL-SSO
Authority to Provide for :
a Standard Service Offer :
Pursuant to R.C. 4928.143 :
in the Form of an Electric:
Security Plan. :

- - -

DEPOSITION

of Rodney L. Phillips, taken before me, Karen Sue
Gibson, a Notary Public in and for the State of Ohio,
at the offices of FirstEnergy Corporation, 76 South
Main Street, Akron, Ohio, on Wednesday, July 1, 2015,
at 9 a.m.

- - -

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INDEX

- - -

Rodney L. Phillips	Page
Cross-Examination by Mr. Soules	5
Cross-Examination by Ms. Petrucci	135
Cross-Examination by Ms. Fleisher	148
Cross-Examination by Mr. Olikier	162
Further Cross-Examination by Mr. Soules	191
Further Cross-Examination by Mr. Olikier	210

- - -

Deposition Exhibit	Identified
1 Phillips Workpaper (Pages 1-2 Confidential)	27
2 TEAC Recommendations to the PJM Board PJM Staff Whitepaper May 2012	31
3 SC Set 1-INT-5	60
4 SC Set 1-INT-6	61
5 IEU Set 1-INT-10 (Confidential)	198
6 Davis-Besse and Sammis Generation Retirement Study (Confidential)	201
7 OCC Set 6-INT-150 (Confidential)	203

- - -

Wednesday Morning Session,

July 1, 2015.

- - -

RODNEY L. PHILLIPS

being by me first duly sworn, as hereinafter
certified, deposes and says as follows:

CROSS-EXAMINATION

By Mr. Soules:

Q. Good morning, Mr. Phillips.

A. Good morning.

Q. My name is Michael Soules, and I am
representing Sierra Club in this proceeding. Could
you please state your name for the record.

A. Yeah. Rodney L. Phillips.

Q. Okay. And what is your business address,
Mr. Phillips?

A. My business address -- you know what? I
don't use it all the time. It's 76 South Main,
Akron, Ohio.

Q. Okay. Great. And what is your current
position within FirstEnergy Corporation?

A. Director, Transmission Operations.

Q. Okay. And when did you begin serving in
your current position?

1 A. That would have been in 2012.

2 Q. Okay. And you're directly employed by
3 FirstEnergy Service Company; is that correct?

4 A. Yes, FirstEnergy Service Company.

5 Q. Okay. And that's the company from which
6 you receive a paycheck?

7 A. Yes.

8 Q. Okay. Do you receive any compensation
9 from American Transmission Systems, Inc.?

10 A. No.

11 Q. If I refer to that company as ATSI, will
12 you understand what I mean?

13 A. Yes.

14 Q. Do you supervise other employees in your
15 current position?

16 A. Yes.

17 Q. How many employees?

18 A. I have five direct reports -- six direct
19 reports, I guess.

20 Q. Okay. And what are those employee's
21 responsibilities?

22 A. I have employees as secretaries serve for
23 me, one employee who is our general manager of
24 transmission operations who the control center

1 management reports to them. I have two managers who
2 are in charge of our support operations for the
3 group, and then I have another employee who is a
4 consultant who reports to me.

5 Q. And do those five direct reports have a
6 number of other employees that report to them?

7 A. Yes.

8 Q. How large is your group within
9 FirstEnergy Corporation?

10 A. The transmission op group 170.

11 Q. Okay. And are all those employees
12 located here in Akron?

13 A. No.

14 Q. Where are they located?

15 A. Some are in Akron. Some -- a couple are
16 in Greensburg, Pennsylvania, and others in Fairmont,
17 West Virginia.

18 Q. Okay. Who do you report to within
19 FirstEnergy Corporation?

20 A. Carl Bridenbaugh.

21 Q. And what's his title?

22 A. Vice President, Transmission.

23 Q. Okay. Does Gavin Cunningham report to
24 you?

1 A. No.

2 Q. Is he still employed by FirstEnergy?

3 A. No.

4 Q. Okay. Did he previously report to you?

5 A. No.

6 Q. Did you previously report to him?

7 A. No.

8 Q. Okay. Could you maybe describe what your
9 working relationship was with Mr. Cunningham.

10 A. With Mr. Cunningham reviewed his
11 testimony in this. Not too much other business with
12 Mr. Cunningham.

13 Q. Okay. Thank you. Now, in your current
14 position you're responsible for overseeing the
15 monitoring and operation of FirstEnergy's
16 transmission system?

17 A. Correct.

18 Q. Okay. Are you responsible for
19 FirstEnergy's entire transmission system?

20 A. Yes.

21 Q. Okay. And what are your specific
22 responsibilities with respect to the operation of the
23 transmission system?

24 A. Our group has our control centers that

1 monitor the transmission system.

2 Q. And how many -- these are the
3 transmission control centers you referenced in your
4 testimony?

5 A. I am not exactly sure. You have to point
6 me to.

7 Q. I think it was on page 3, line 20.

8 A. Yes, yeah, that's the control centers I
9 am talking about.

10 Q. How many transmission control centers
11 does your group operate?

12 A. Two.

13 Q. Okay. And I believe -- I believe you
14 said a minute ago that through the transmission
15 control centers your group monitors the transmission
16 system; is that correct?

17 A. Yeah. Can you say that again.

18 Q. Yeah. So I believe you mentioned a
19 monitoring role that your group has with respect to
20 the transmission system.

21 A. Yes.

22 Q. Does it also actively manage the
23 transmission system, or is it more of a monitoring
24 role?

1 A. I'm not sure what you mean by "actively
2 manage."

3 Q. Does -- is your group responsible for
4 outages of portions of the transmission system?

5 A. We coordinate outages.

6 Q. With PJM?

7 A. PJM and the field.

8 Q. Okay. Is your group responsible for
9 outages of generating units?

10 A. No.

11 Q. It's only responsible for outages of
12 transmission facilities?

13 A. Yes.

14 Q. Okay. In looking at page 3 of your
15 supplemental testimony, line 21, there's a reference
16 to "compliance."

17 A. Yes.

18 Q. What types of compliance is your group
19 responsible for?

20 A. We have different reliability standards
21 that fall to, you know, training requirements for
22 operators, how we operate the system, requirements
23 for PJM, so our compliance group makes sure we have
24 proper procedures in place and monitors our

1 documentation for when we have audits and things.

2 Q. Okay. And when you -- when you
3 referenced I think you said a moment ago "how we
4 operate the system," could you describe what
5 operations your group is responsible for.

6 A. Yes. The operators will, one, monitor
7 where they look and see what type of realtime
8 outflows are happening on the system, what the status
9 of breakers that open or close, voltages on the
10 system. They interface with the field when the field
11 wants to remove something for service, so they give
12 switching instructions on how to remove the
13 equipment, and then they monitor for what the next
14 contingencies are to identify potential issues.

15 Q. So their -- in part your group is keeping
16 an eye out for future potential contingencies that
17 might crop up in realtime.

18 A. Correct.

19 Q. Okay. Does your group perform power
20 network analyses?

21 A. Yes, uh-huh.

22 Q. Okay. What types of analyses?

23 A. Our group does that through our energy
24 management system to study contingencies that will

1 occur on the system.

2 Q. You said that's your eng -- the
3 engineering group?

4 A. No. Our tools that we have with our
5 energy management system are used to do the power
6 network analysis to identify the contingencies.

7 Q. Does your group work with any particular
8 modeling software in performing those analyses?

9 A. For the transmission upgrade it's our
10 energy management system which is Alstom.

11 Q. Alstom?

12 A. A-L-S-T-O-M.

13 Q. Is that a FirstEnergy developed system?

14 A. No. That's a company that manufacturers
15 energy management systems.

16 Q. Okay. Does your group perform steady
17 state load flow studies?

18 A. Yes.

19 Q. Okay. And what types of scenarios would
20 your group be performing those types of studies?

21 A. They would be studying for loss of
22 transmission lines, breakers, generators.

23 Q. Do you personally review the power -- the
24 various power network analyses that your group

1 prepares?

2 A. Some of them.

3 Q. Okay. Which -- I'm sorry.

4 A. Yes.

5 Q. Which ones do you review?

6 A. Every day we produce, they put the
7 results out, show what the contingencies will be for
8 the next day potentially.

9 Q. Okay. Do -- are these analyses typically
10 focused on near-term contingencies?

11 A. Yes.

12 Q. Does your group regularly perform
13 longer-term load flow studies?

14 A. Can you rephrase that.

15 Q. Certainly. Sorry for the confusion. In
16 performing the load flow -- strike that.

17 With respect to the load flow studies
18 that your group performs, are any of them focused on
19 a longer timeframe than just the next few days?

20 A. Yes.

21 Q. Okay. What types of analyses would
22 those --

23 A. We could be looking one month, three
24 month, those type of periods.

1 Q. Anything beyond one- to three-month
2 timeframes?

3 A. Occasionally.

4 Q. And what -- and what circumstances would
5 your group look at a longer timeframe?

6 A. If there was some special outage that we
7 were wanting to look at that was long in the future.

8 Q. Okay. And the modeling files that your
9 group is generally working with, do those include the
10 entire eastern interconnection?

11 A. They would include parts of that. It
12 would be the model within EMS.

13 Q. Could you explain for the layperson what
14 the model of the EMS is?

15 A. Energy management system, that's the
16 computer program that's used to monitor the
17 transmission system. And it has a network model in
18 it that models our area and the other areas around us
19 for the transmission system.

20 Q. Okay. Thank you. Could that EMS be used
21 to model the retirement of a generating unit?

22 A. Can you rephrase by "model."

23 Q. Could you use the EMS to model the
24 transmission impacts of a generating unit retirement?

1 A. Yes.

2 Q. Okay. And does your group regularly
3 perform those types of analyses?

4 A. Yes. Can you rephrase that. Say that
5 question again.

6 Q. The one that I just asked?

7 A. Yeah.

8 Q. Well, let's -- why don't we step back.

9 A. Okay.

10 Q. A little bit broader, does your group
11 regularly model the retirement of generating units?

12 A. No.

13 Q. But it has done so in the past?

14 A. We have modeled generating outages, yes.

15 Q. Outages but not retirements?

16 A. Could be outages that are scheduled,
17 could be ones who were scheduled to retire.

18 Q. Okay. Does your group contract with any
19 outside companies to perform power network analyses?

20 A. I'm sorry, I didn't catch the first part
21 of that. Sorry.

22 Q. Does your group contract with any outside
23 companies in performing power network analyses?

24 A. And by group, transmission operations?

1 Q. Correct.

2 A. No.

3 Q. So all of the analyses are performed
4 in-house?

5 A. For transmission operations, yes.

6 Q. Okay. Could you describe in general
7 terms what a steady state load flow is?

8 A. Yes. A steady state load flow, you have
9 a model of your system that has all of your lines,
10 transforming devices, has the characteristics for
11 each of those devices, and then the purpose of the
12 load flow is to calculate what the voltages of the
13 power flow is, what the current flow is on that
14 system that you are modeling.

15 Q. Does your group ever perform load flow
16 studies that encompass the entire PJM region?

17 A. Yes.

18 Q. In what circumstances?

19 A. We model the entire system, so we will
20 take outages for various places on the PJM system to
21 see what the results are.

22 Q. Okay. Thank you. And in your
23 professional career have you personally conducted any
24 load flow studies?

1 A. Yes.

2 Q. And how frequently or how often have you
3 done so?

4 A. I'm not sure how to quantify.

5 Q. Have you been regularly performing those
6 types of studies for years?

7 A. Yes. I have done them over a number of
8 years, yes.

9 Q. Okay. And have you worked with models
10 other than the Alstom models?

11 A. Yes.

12 Q. Which models have you worked with?

13 A. Let me back up. You say "model."

14 Q. I'm sorry. Modeling software.

15 A. Modeling software.

16 Q. Yeah.

17 A. So PSEE, Seaman's product. There is a GE
18 PSLF product. And then there is a TARA product by
19 PowerGEM.

20 Q. And you have worked with all of those
21 software programs?

22 A. Yes.

23 Q. Okay. Could you describe what types of
24 scenarios you've modeled in performing steady state

1 load flow studies.

2 A. Normal scenarios where you are just doing
3 your various outages, you know, normal state,
4 everything in, normal single contingencies, variety
5 of those different contingencies. And then we've
6 modeled, you know, if you have got a certain piece of
7 equipment you are trying to replace, to upgrade,
8 model putting new equipment in service, model, you
9 know, taking other equipment and generators out of
10 service.

11 Q. And when you refer to new equipment, are
12 you talking about transmission facilities
13 specifically?

14 A. Yes.

15 Q. Okay. As opposed to generators which are
16 not transmission facilities.

17 A. Correct.

18 Q. Okay. In terms of the studies you've
19 personally conducted, has the timeframe of those
20 studies always been three months or less?

21 A. No.

22 Q. In what circumstances have you modeled
23 something beyond three months?

24 A. When we were in -- had our transmission

1 planning responsibility, we would have been looking
2 at models that were out one year, five years.

3 Q. And when --

4 MR. SOULES: I'm sorry. Could I have the
5 last answer read back.

6 (Record read.)

7 Q. Could you explain what you mean by
8 "transmission planning responsibility"?

9 A. In several of my jobs, I had
10 responsibility for our transmission planning
11 function, so it would have been during that
12 experience that I was referring to.

13 Q. Could you point me to which jobs you are
14 referring to.

15 A. Sure. If you -- page 2, line 21,
16 director of planning and system operations. Page 3,
17 line 5, it talks about director of transmission
18 planning. Page 3, line 10, also discusses when I had
19 transmission planning.

20 Q. Okay. Thank you. In -- scratch that.
21 We'll move on. Thank you.

22 Mr. Phillips, have you ever been deposed
23 before?

24 A. No.

1 Q. Okay. Have you ever testified in a court
2 case before?

3 A. No.

4 Q. Okay. Have you ever provided written
5 testimony to a state public utilities commission or
6 public service commission?

7 A. No.

8 Q. Have you ever provided live testimony to
9 a state public utilities commission or public service
10 commission?

11 A. No.

12 Q. Now, in this case you have adopted Gavin
13 Cunningham's direct testimony and Exhibit GLC-1 as
14 your own; is that correct?

15 A. Yes.

16 Q. And in doing so you also made several
17 adjustments to the results of the transmission impact
18 study discussed in Mr. Cunningham's testimony,
19 correct?

20 A. Yes.

21 Q. Okay. And those adjustments are
22 described on page 4, lines 13 through 23, of your
23 supplemental testimony; is that correct?

24 A. What were the lines again you said?

1 Q. Lines 13 through 23.

2 A. Wrong page.

3 MR. LANG: There you go.

4 A. Yes.

5 MR. SOULES: Do we need to? Okay.

6 Q. You will get used to the beeping.

7 And the adjustments on page 4, lines 13
8 through 23, are the only changes that you are making
9 to the results of Mr. Cunningham's transmission
10 impact study, correct?

11 A. Yes.

12 Q. Okay. And those adjustments are the only
13 changes that you are making to Mr. Cunningham's
14 direct testimony; is that correct?

15 A. Yes.

16 Q. Okay. With the exception of the specific
17 adjustments discussed on page 4 of your supplemental
18 testimony, do you agree with all of the conclusions
19 and opinions offered in Mr. Cunningham's direct
20 testimony?

21 A. Yes.

22 Q. Okay. Could you describe what specific
23 steps you took prior to adopting Mr. Cunningham's
24 direct testimony?

1 A. Yes.

2 Q. Okay. Please do so.

3 A. I met with Mr. Cunningham. We walked
4 down through the process of how he did his study,
5 what was the load flow models he used, how he
6 reviewed those, how those matched up with PJM
7 process, and walked through based on the results he
8 got how he modeled in what the costs were for the
9 overloads that he identified for the upgrades.

10 Q. And how long did the two of you meet?

11 A. I don't -- I don't remember exact time.

12 Q. Was it a period of hours? Period of
13 days?

14 A. It would have been several days'
15 discussion, reviewing.

16 Q. Okay. Did Mr. Cunningham have any
17 workpapers that you reviewed?

18 A. No.

19 Q. Okay. And you obviously reviewed his
20 testimony and exhibit before adopting it.

21 A. Yes.

22 Q. Okay. Did you review any other documents
23 before adopting Mr. Cunningham's testimony?

24 A. No.

1 Q. Okay. So in terms of the documentation
2 you reviewed before adopting his testimony, that
3 consisted of the testimony and the accompanying
4 exhibit; is that correct?

5 A. Can you say that again.

6 Q. In terms of the documentation that you
7 reviewed before adopting his testimony, that -- that
8 included only his testimony and the exhibit.

9 A. Correct.

10 Q. Okay. Have you reviewed the responses to
11 other parties' discovery requests that Mr. Cunningham
12 has provided in this case?

13 A. Yes.

14 Q. Have you reviewed all of those?

15 MR. LANG: Objection.

16 A. I don't know if it's all of them or not.

17 Q. But you have reviewed several?

18 A. Yes.

19 Q. Okay. Do you think Mr. Cunningham's
20 discovery responses are factually accurate?

21 A. Yes, except for maybe one item.

22 Q. Okay. Which item would that be?

23 A. I remember there was one discovery
24 question where he listed out the owners of the

1 transmission lines. I think one of those might have
2 been incorrect.

3 Q. Okay. I believe that information is
4 confidential so maybe we could ask some more
5 questions about that this afternoon. And by the way
6 if I do ask a question that does involve -- or your
7 answer would require disclosing confidential
8 information, just let me know and we will punt that
9 to the afternoon.

10 A. Okay.

11 Q. Other than that one item, were there any
12 other errors that --

13 A. I do not remember any, no.

14 Q. Okay. Are you sponsoring any of
15 Mr. Cunningham's discovery responses as your own?

16 A. No.

17 Q. Okay. In looking at page 2 of the direct
18 testimony that you've adopted, starting on line 13,
19 it states "My testimony quantifies the cost of
20 additional transmission upgrades that would be
21 necessary as a result of (i) already announced
22 planned retirements, and (ii) the closure of the
23 Davis-Besse Nuclear Power Station ('Davis-Besse') and
24 the W.H. Sammis Plant ('Sammis') collectively, the

1 'Plants').". Is that your testimony?

2 A. Yes.

3 Q. Okay. I would like to take a few minutes
4 to talk about these already announced plant
5 retirements. On page 3, lines 10 through 12, of your
6 direct testimony, you discuss the announced
7 retirement of approximately 2,400 megawatts of
8 coal-fired power plants in Ohio. Do you see that in
9 your testimony?

10 A. Yes.

11 Q. Okay. And then your testimony references
12 "38 separate transmission system upgrades that were
13 required to maintain reliability." Do you see where
14 it says that?

15 A. Yes.

16 Q. Do you know which specific generating
17 units are included in the approximately 2,400
18 megawatts referenced in your testimony?

19 A. Yes.

20 Q. Okay. Which ones?

21 A. Ashtabula, Eastlake units, Bay Shore,
22 Lake Shore, and Niles.

23 Q. Okay. Thank you. And most of those
24 retiring coal units are located in the ATSI zone,

1 correct?

2 A. Yes.

3 Q. Do you know when these approximately
4 2,400 megawatts of retirement -- scratch that.

5 Do you know when these approximately
6 2,400 megawatts of coal retirement were announced?

7 A. No.

8 Q. Okay. Do you know why Mr. Cunningham
9 selected these coal plant retirements to discuss in
10 his direct testimony?

11 A. Because they were coal-fired plants that
12 we're retiring and would require transmission
13 upgrades.

14 Q. Are you aware of any other coal-fired
15 power plants that were retiring -- or that have been
16 retiring in recent years?

17 A. Can you rephrase.

18 Q. Sure. These approximately 2,400
19 megawatts does not represent the entirety of
20 coal-fired power plants that are retiring in PJM
21 recently, correct?

22 A. Yes, correct.

23 Q. Do you have any insight as to why
24 Mr. Cunningham focused on these particular 2,400

1 megawatts as opposed to other coal retirements?

2 A. Yes.

3 MR. SOULES: Please, everyone, go on
4 mute. Thank you.

5 Q. And why is that?

6 A. I think he just focused on what was
7 happening in ATSI.

8 Q. Okay. Are the Niles units in ATSI?

9 A. Yes.

10 Q. Okay. And it's your testimony that these
11 particular 2,400 megawatts of coal-fired retirements
12 will require 38 transmission system upgrades
13 specifically, correct?

14 A. Yes. That's what PJM estimated, yes.

15 Q. Okay. Did you have any personal
16 involvement in evaluating the reliability impacts of
17 retiring the units at Ashtabula, Eastlake, Bay Shore,
18 or Lake Shore?

19 A. No.

20 MR. SOULES: Can we have this marked
21 Exhibit 1.

22 (EXHIBIT MARKED FOR IDENTIFICATION.)

23 Q. Mr. Phillips, momentarily you are going
24 to be passed a document that's been marked as Exhibit

1 1. This document which was served on the parties on
2 May 7, 2015, is entitled "Phillips Workpaper." Are
3 you familiar with this document?

4 A. Yes.

5 Q. And could you tell me what this document
6 is?

7 A. This document shows the calculations that
8 were done for the cost estimates for upgrades.

9 MR. LANG: It's multiple pages.

10 THE WITNESS: Oh.

11 A. Also contains my matrix that shows
12 estimated costs for transmission upgrades, contains a
13 listing of projected retirements in PJM. These are
14 for Ohio. And also contains a worksheet on cost
15 allocation for the upgrades.

16 Q. Okay. Thank you.

17 MR. LANG: And I just note the first two
18 pages are confidential.

19 MR. SOULES: Yes. I was actually going
20 to mention the same thing.

21 Q. I am not going to inquire about the first
22 two pages in this session this morning.

23 A. Okay.

24 Q. And, again, if I do ask you a question

1 the answer which would require confidential
2 information, we can move that to later.

3 Let's look at the seventh -- the sixth
4 and seventh pages of this document. These two pages
5 have a table that appears to list a series of
6 transmission upgrades including their costs, the
7 allocation of those costs, and a description. Do you
8 see the table that's displayed on these two pages?

9 A. Yes.

10 Q. Okay. And you're familiar with this
11 table, correct?

12 A. Yes.

13 Q. Okay. And am I correct this table
14 displays the 38 transmission upgrades that are
15 described on page 3 of your direct testimony?

16 A. Yes.

17 Q. Okay. And these specific transmission
18 upgrades were required due to the coal plant
19 retirements that are described on page 3 of your
20 direct testimony?

21 A. Yes.

22 Q. Okay. Looking at the headings, could you
23 explain to me what the non-Ohio heading signifies?

24 A. That was referring to allocations that

1 would have been to companies outside of Ohio.

2 Q. And is that -- does that include any
3 companies outside of Ohio or only companies that are
4 within the ATSI zone but outside of Ohio?

5 A. Any -- could be any companies outside of
6 Ohio.

7 Q. Okay. Who put together this list of
8 transmission upgrades?

9 A. Can you rephrase that.

10 Q. Sure. Who prepared the table that's
11 listed on the sixth and seventh pages of this
12 exhibit?

13 A. Gavin had done part of it, and I had done
14 part of it.

15 Q. Okay. Could you tell me what part
16 Mr. Cunningham prepared.

17 A. Yeah. He helped on the list of projects
18 and everything that was listed here.

19 Q. Okay. And then what part did you do?

20 A. The allocation calculation as far as the
21 allocated between ATSI or other zones.

22 Q. Do you know where the underlying
23 information that's contained in this table is from?

24 A. Yes.

1 Q. And where is it from?

2 A. PJM TEAC report that identified the
3 upgrades.

4 Q. Do you know the date of that report?

5 A. 2012.

6 Q. Okay. Were there any other documents
7 that were used to generate this table?

8 A. No.

9 Q. Okay.

10 MR. SOULES: Can we have this marked
11 Exhibit 2.

12 (EXHIBIT MARKED FOR IDENTIFICATION.)

13 Q. Mr. Phillips, you are being handed a
14 document entitled "Transmission Expansion Advisory
15 Committee Recommendations to the PJM Board, PJM Staff
16 Whitepaper May 2012." Are you familiar with this
17 document?

18 A. Yes.

19 Q. Is this the TEAC report that you just
20 referenced?

21 A. Yes.

22 Q. Okay. And does this particular report
23 link the 2,400 megawatts of coal plant retirements to
24 the 38 transmission upgrades described in Exhibit 1?

1 A. Yes.

2 Q. Could you point me to where this report
3 makes that link.

4 A. Well, this report lists throughout it the
5 generators that were retiring within ATSI. So on
6 page 2, 3, it lists the generators that are retiring.

7 Q. And in this -- the list on pages 2 and 3
8 includes not only the 2,400 megawatts of retirements
9 discussed in your testimony but a number of other
10 coal plant retirements.

11 A. Yes.

12 Q. Okay. Thank you. So could you -- and I
13 think maybe you were mid review, so if you want to
14 take a minute, but if you could point me to where
15 this report links the 2,400 megawatts of coal plant
16 retirements to those 38 transmission upgrades, that
17 would be great.

18 A. The link is that then when you get to the
19 back, it refers to the upgrades that are required in
20 the ATSI zone so page 14, 15.

21 Q. So in order to develop the list in
22 Exhibit 1, either you or Mr. Cunningham pulled the
23 transmission upgrades listed on pages 14 and 15?

24 A. Yes.

1 Q. And the way you did that was by looking
2 to see which transmission owner -- which transmission
3 zone the upgrade was located in?

4 A. Yes.

5 Q. And am I also correct that a couple of
6 these were allocated across multiple zones and those
7 are listed on page 20?

8 A. No.

9 Q. Or, I'm sorry, is it not page -- pages 20
10 through 22, some of these upgrades were also
11 discussed in your exhibit, in Exhibit 1?

12 A. Yes.

13 Q. Okay. Were any of the 38 transmission
14 upgrades designed in part to address the retirement
15 of generating units outside of Ohio?

16 A. I don't -- I don't remember. I don't
17 remember.

18 Q. Do you know if any of these 38
19 transmission upgrades were designed to address
20 reliability problems that resulted from coal plant
21 retirements other than the 2,400 megawatts discussed
22 in your testimony?

23 A. I don't know. I do not remember.

24 Q. Is there anything that would refresh your

1 recollection?

2 A. Discussions with -- my notes with
3 discussions with Gavin.

4 Q. Okay. Is it fair to say you have a
5 pretty good understanding of how transmission upgrade
6 costs get allocated among different transition zones?

7 A. Yes.

8 Q. Transmission zones?

9 A. Yes.

10 Q. So maybe could you walk me through in
11 general terms how this might have played out where we
12 have a series of coal plant retirements including the
13 2,400 megawatts but also including a lot of other
14 coal plant retirements occurring at the same time.
15 How is one able to determine which transmission
16 upgrades are associated with which particular
17 retirements?

18 A. In general if the upgrade -- PJM will
19 discuss if the upgrade is related to the plant
20 retirements. That's probably the main way PJM has
21 referred to it.

22 Q. So like in a report like this --

23 A. Yes.

24 Q. -- Exhibit 2?

1 A. A report or another meeting.

2 Q. Okay. Is it possible that some of these
3 38 transmission upgrades could be addressing
4 reliability problems that resulted from coal plant
5 retirements other than the 2,400 megawatts?

6 A. I don't know.

7 Q. Okay. And once -- once you do have a
8 series of transmission upgrades like has been
9 occurring in recent years, could you describe how PJM
10 decides which transmission zones are going to have to
11 pick up the tab for those.

12 A. Yes.

13 Q. And how is that?

14 A. PJM has a process if a project that's
15 over \$5 million and it's double circuit 345 or 500
16 kV, half the cost is allocated to all zones on a
17 load ratio share basis, and the other 50 percent of
18 the cost is done on what they call a DFAX
19 methodology. If it's a project less than -- I mean,
20 a project greater than \$5 million but it's 345 to 100
21 kV, then it's all done on DFAX methodology, and if it
22 is a project that is less than \$5 million, it's done
23 based on the zone -- goes all to the zone the upgrade
24 occurred in.

1 Q. Okay. And what's the DFAX methodology?

2 A. That's a study that PJM does. It's
3 basically determining for the upgrade that's going
4 into service basically which load zones are using
5 that benefit from that upgrade, who is using that.
6 They have a methodology they go through to calculate
7 that, figure out which load is actually using that
8 upgrade.

9 Q. Okay. And is PJM the only entity that
10 employs the DFAX methodology?

11 A. I don't know.

12 Q. Would FirstEnergy be able to replicate
13 the DFAX methodology?

14 A. No.

15 Q. Okay. But the principal focus of that
16 methodology is which transmission zones will benefit
17 from the transmission upgrade?

18 A. Who will use it, yes.

19 Q. Okay. And none of those costs are
20 allocated based solely on the physical location of
21 the retiring unit; is that correct?

22 A. Yes.

23 Q. Okay. Could we take a look at the
24 seventh page of your workpapers, Exhibit 1. In the

1 middle of this page there is a table entitled "Total
2 Upgrade Cost". Do you see that table?

3 A. Yes.

4 Q. And did you create this table?

5 A. Yes.

6 Q. Okay. And within that table there are a
7 series of calculations, one of which is entitled
8 "Original Analysis" and one of which is entitled
9 "Updated Analysis." Do you see that?

10 A. Yes.

11 Q. Why are there two separate analyses
12 listed in this table?

13 A. When I worked this table with Gavin, he
14 indicated when he initially was looking at it, he was
15 thinking it in terms of what's in the first part of
16 the table. He did not -- was not thinking about the
17 portions of the dollars that were allocated outside
18 of the ATSI, and the bottom part was updated -- I
19 reflected it to show the dollars that were allocated
20 outside of ATSI.

21 Q. Well, doesn't the original analysis also
22 identify the dollars allocated outside of ATSI?

23 A. I'm not sure what -- I don't know.

24 Q. Okay. But you -- you did not run the

1 calculations presented in the original analysis; is
2 that correct?

3 A. Yes, correct.

4 Q. But you did perform the calculations
5 listed in the updated analysis?

6 A. Yes.

7 Q. Okay. Does this table display the
8 percentage of these estimated upgrade costs that Ohio
9 ratepayers would be responsible for?

10 A. Yes.

11 Q. Okay. And what percentage is that?

12 A. The Ohio customer allocation was 92.5
13 percent.

14 Q. Okay. And how did you figure out that
15 percentage?

16 A. For costs that are allocated to ATSI,
17 there's around 7-1/2 percent that goes to Penn Power
18 which is in Pennsylvania.

19 Q. And is that -- so you took a haircut
20 off of -- like if we are looking at the updated
21 analysis, you took 7.5 percent off initially for the
22 Penn Power.

23 A. Yes.

24 Q. Okay. And then you took another 7-1/2

1 percent off for -- to figure out the allocation for
2 the companies' customers; is that correct?

3 A. Yes.

4 Q. And I should pause. I should have said
5 this -- should have asked this earlier. If I refer
6 to the Ohio Edison Company, the Cleveland Electric
7 Illuminating Company, and the Toledo Edison as the
8 companies, will you understand what I mean?

9 A. Yes.

10 Q. Okay. And that was based upon your
11 understanding that some portion of those costs would
12 be picked up by municipal systems?

13 A. Yes.

14 Q. Okay. The \$978 million figure, would
15 that be the total costs allocated to ATSI
16 collectively?

17 A. Can you rephrase.

18 Q. Sure, sure. Does -- does the "Total
19 Upgrade Cost" table include any estimated
20 transmission upgrade costs for customers in Ohio but
21 outside of ATSI?

22 THE WITNESS: Can you repeat that back.

23 (Record read.)

24 A. I'm still not understanding the question.

1 Q. Sure. So obviously there are ratepayers
2 in Ohio that are located outside of the ATSI zone,
3 correct? Like in the AEP zone or?

4 A. Or Ohio customers out, yes.

5 Q. Are any of the costs discussed in the
6 total upgrade costs table referring to costs that
7 Ohio customers outside of ATSI would have to pay?

8 A. No.

9 Q. Okay. So you began with ATSI, and then
10 you just took haircuts out of that 978 number.

11 A. Yes.

12 Q. Okay. Thank you. So the companies'
13 customers are responsible for 85 percent -- or were
14 responsible for 85 percent of the transmission
15 upgrade costs associated with the approximately 2,400
16 megawatts of retirements?

17 A. Yes.

18 Q. Okay. Could we turn to page 10 of your
19 supplemental testimony. So starting on line 11, it
20 states, "For example, for the transmission projects
21 necessitated by the retirements of approximately
22 2,400 megawatts of coal-fired power plants in Ohio
23 between 2012 and 2015, approximately 89 percent of
24 the estimated \$1 billion in costs were allocated to

1 Ohio, and customers of the Companies were responsible
2 for approximately 82 percent of the costs." Is that
3 your testimony?

4 A. Yes.

5 Q. Okay. Why do your testimony and
6 workpapers identify a different percentage of costs
7 that the companies' customers are responsible for?

8 MR. LANG: Objection. Go ahead.

9 A. I'm not sure what you are asking.

10 Q. So the page -- the seventh page of your
11 workpapers indicates that 85 percent of the
12 transmission upgrade costs will be borne by the
13 companies' customers.

14 A. No.

15 Q. Okay. Can you explain the difference
16 between the 85 percent figure listed in your
17 workpapers and the 82 percent figure listed on --

18 A. Yes.

19 Q. Okay. Please do.

20 A. 85 percent refers to 85 percent of the
21 costs allocated to ATSI. The 82 percent refers to
22 the total costs of the transmission upgrades.

23 Q. So -- so for the 38 -- so the total costs
24 of the 38 transmission upgrades is just over a

1 billion dollars?

2 A. Yes.

3 Q. Okay. And then the companies' customers
4 were responsible ultimately for 82 percent of those
5 costs.

6 A. Yes.

7 Q. Okay. So just another question about
8 these series of calculations, the non-Ohio portion of
9 the costs listed in your workpapers totals to 38.5
10 million. Do you see where it states that on the
11 seventh -- the final page?

12 A. Yes, uh-huh.

13 Q. Looking at the "Total Upgrade Cost"
14 table, it -- scratch that.

15 I think I got the math finally so thank
16 you. Could we turn to the fifth page of your
17 workpapers, Exhibit 1. So this page includes a
18 series of tables which lists several generating
19 units. Do you see that on the fifth page of your
20 workpapers?

21 A. Yes.

22 Q. Did you prepare this page of your
23 workpapers?

24 A. Yes.

1 Q. Okay. And what does this list of
2 generating units signify?

3 A. This was referring to generators who had
4 deactivated in Ohio since -- coal generators since
5 2005. And then the other part was other generators
6 who were listed to retire later in 2015.

7 Q. Okay. So a number of these retirements
8 either occurred over or are scheduled to occur
9 between 2012 and 2015; is that correct?

10 A. No.

11 Q. No?

12 A. No.

13 Q. None of these retirements occurred
14 between 2012 and 2015?

15 A. I think you asked two different
16 questions.

17 MR. LANG: He did.

18 MR. SOULES: I'm sorry, could I have my
19 second to last question read back.

20 (Record read.)

21 Q. Did any of these generating units listed
22 on the fifth page of your workpapers retire between
23 2012 and 2015?

24 A. Yes.

1 Q. And some of those units were not the
2 2,400 megawatts referenced in your direct testimony,
3 correct?

4 A. Yes.

5 Q. But the reason that Mr. Cunningham
6 focused on those approximately 2,400 megawatts was
7 because they were located within the ATSI zone?

8 A. Yes.

9 Q. Okay. Do you know if the other
10 transmission upgrades -- scratch that.

11 If we set aside the approximately 2,400
12 megawatts of retirements, do you know if the other
13 coal plant retirements listed here require
14 transmission upgrades?

15 A. I don't know.

16 MR. SOULES: Okay. Let's -- could we
17 take a 5-minute break?

18 MR. LANG: Sure.

19 MR. SOULES: Okay. Thank you.

20 MR. OLIKER: Jim, this is Joe Oliker.

21 Before we take a break I would like to make an
22 appearance. I joined about 45 minutes ago.

23 MR. LANG: Anyone else that wants to make
24 an appearance?

1 MR. STINSON: Yeah, Dane Stinson on
2 behalf of NOPEC.

3 MR. MOORE: Kevin Moore for the OCC.

4 (Recess taken.)

5 Q. Welcome back, Mr. Phillips. So I would
6 like to shift gears and talk a little bit about the
7 transmission impact study discussed in your
8 testimonies. Could you describe in general terms
9 what a load deliverability analysis is.

10 A. Yeah. In a load deliverability
11 analysis -- I have to get my words. You are trying
12 to determine for one of the load zones when it's
13 under an emergency condition is the transmission
14 system strong enough to deliver capacity to that
15 zone.

16 Q. Okay. And a load deliverability analysis
17 is a type of steady state load flow study, correct?

18 A. It's a scenario that PJM does, yes.

19 Q. Using a steady state load flow model.

20 A. Yeah.

21 Q. Okay. And could you describe in general
22 terms what a generation deliverability analysis is.

23 A. Yes. For generation deliverability you
24 are trying to make sure that generators in areas are

1 not bottled, that the transmission is strong enough
2 to allow that generation to be delivered throughout
3 PJM.

4 Q. Okay. Thank you. And that's also a
5 scenario that's run using a steady state load flow
6 model, right?

7 A. Yes.

8 Q. Now, in your direct and supplemental
9 testimony, you discuss some results of a study that
10 estimated the cost of transmission upgrades that
11 would be needed if the Sammis and Davis-Besse plants
12 were to retire; is that correct?

13 THE WITNESS: Can you repeat that again.
14 I missed the first part.

15 (Record read.)

16 A. Yes.

17 Q. If I refer to that study as the
18 transmission impact study, will you understand what I
19 mean?

20 A. Yes.

21 Q. Okay. Now, originally Mr. Cunningham was
22 responsible for the transmission impact study; is
23 that correct?

24 A. Yes.

1 Q. Okay. Do you know when that study was
2 performed?

3 A. I don't know.

4 Q. Do you have a ballpark sense of when it
5 was performed?

6 A. 2014.

7 Q. Okay. And the transmission impact study
8 used three primary inputs, correct?

9 A. What -- rephrase "inputs."

10 Q. Sure. And I'm -- I am looking at your
11 direct testimony on page 4, lines 10 through 12.

12 A. Yes.

13 Q. Okay. And those -- those three primary
14 inputs were PJM's regional transmission expansion
15 plan 2019 base case model, PJM's reliability pricing
16 model 2017-2018 base case model, and PJM's per-unit
17 cost estimates; is that correct?

18 A. Yes.

19 Q. Okay. If I refer to the regional
20 transmission expansion plan as RTEP, will you
21 understand what I mean?

22 A. Yes.

23 Q. And if I refer to the reliability pricing
24 model as the RPM, will you understand what I mean?

1 A. Yes.

2 Q. Okay. Now, the overall transmission
3 impact study is based on both a generation
4 deliverability analysis and a load deliverability
5 analysis, correct?

6 A. Yes.

7 Q. Okay. And the 2019 RTEP base case model
8 was used to perform the generation deliverability
9 analysis?

10 A. Yes.

11 Q. And the RPM 2017-2018 base case model was
12 used to perform the load deliverability analysis?

13 A. Yes.

14 Q. Who performed -- who specifically
15 performed the generation deliverability analysis?

16 MR. LANG: Objection.

17 A. I mean, when you say "specifically
18 performed," meaning?

19 Q. Who -- who conducted the analysis?

20 A. Well, Gavin was part of the process
21 conducting the analysis.

22 Q. Did -- did Mr. Cunningham perform the
23 modeling associated with the generation
24 deliverability analysis?

1 A. Can you rephrase that when you say
2 "perform the modeling."

3 Q. Sure. Yeah, so let's take a step back.
4 The generation deliverability analysis involved some
5 load flow modeling; is that correct?

6 A. Yes, yes.

7 Q. And who -- who actually performed that --
8 that modeling?

9 A. Scott Gass.

10 Q. Scott Gass, okay. And is Mr. Gass an
11 employee of FirstEnergy Corporation?

12 A. No.

13 Q. Do you know who he is employed by?

14 A. Yes.

15 Q. Who is he employed by?

16 A. PowerGEM.

17 Q. Okay. So he ran the modeling runs
18 associated with the generation deliverability
19 analysis.

20 A. Yes.

21 Q. Okay. And Mr. Cunningham did not
22 personally do the modeling runs associated with that
23 analysis.

24 MR. LANG: Objection.

1 A. Not personally.

2 Q. I'm sorry. So Mr. Cunningham did not
3 conduct the modeling -- did not directly conduct the
4 modeling associated with that analysis.

5 A. He directed what was done, you know.
6 Mr. Gass ran the software under Gavin's direction.

7 Q. Okay. Did you conduct any modeling --
8 did you personally conduct any modeling associated
9 with the generation deliverability analysis?

10 A. No.

11 Q. Okay. Would FirstEnergy's EMS model be
12 capable of performing the modeling associated with
13 that analysis?

14 A. No.

15 Q. Why not?

16 A. It doesn't do generation deliverability,
17 the function.

18 Q. Does PowerGEM perform other types of load
19 flow studies for FirstEnergy Corporation?

20 A. I don't -- I don't know.

21 Q. Okay. And did Mr. Gass perform the
22 modeling associated with the load deliverability
23 analysis?

24 A. Yes.

1 Q. Do you know what software he used for
2 that analysis?

3 A. TARA.

4 Q. Could you spell that?

5 A. The initials are T-A-R-A.

6 Q. Okay. And was TARA also used for the
7 generation deliverability analysis modeling?

8 A. Yes.

9 Q. Okay. And I think we established earlier
10 that the generation deliverability analysis was based
11 on the 2019 RTEP base case model; is that correct?

12 A. Yes.

13 Q. Okay. And just to confirm although that
14 analysis was using a base case from PJM, PJM itself
15 did not perform any of that hose analyses, correct?

16 MR. LANG: Objection.

17 A. Can you rephrase that.

18 Q. Sure. So Mr. Gass was using a base case
19 that he had received from PJM.

20 A. Yes.

21 Q. But PJM did not conduct any modeling
22 specifically associated with the transmission impact
23 study, correct?

24 A. Can you -- impact study for?

1 Q. For the -- and so -- yeah, I'm sorry. So
2 when I refer to the transmission impact study, I will
3 be consistent in always referring to the one
4 associated with the Sammis and Davis-Besse
5 retirements.

6 A. Okay.

7 Q. Did PJM conduct any modeling associated
8 with that transmission impact study?

9 A. No.

10 Q. Okay. Do you know when the 2019 RTEP
11 base case was developed?

12 A. That would have been developed -- been
13 available in -- for the summer of 2014.

14 Q. It would have been available for the
15 summer of 2014?

16 A. Uh-huh, yes.

17 Q. Do you know when PJM finalizes the base
18 case?

19 A. I don't know the exact date.

20 Q. Do you have a sense of whether it's early
21 in the year? The middle of the year? End of the
22 year?

23 A. It's more near the middle of the year.

24 Q. Okay. So the underlying data that's

1 included in the base case model would be from mid
2 2014 or earlier; is that correct?

3 A. No.

4 Q. Why is that not correct?

5 A. The data that's in there would reflect
6 conditions for 2019, so it would have facilities for
7 2019.

8 Q. Okay. Thank you for the clarification.
9 So the data is forward looking because it's looking
10 at 2019, but the data was collected into the base
11 case in 2014, correct?

12 A. Yes.

13 Q. Okay. And the compilation of that data
14 would have occurred in mid 2014 or earlier.

15 A. Yes.

16 Q. Okay. So the generation deliverability
17 analysis would not reflect any changes to the
18 generation queue that would have occurred since mid
19 2014; is that correct?

20 A. Yes.

21 Q. And that analysis would not reflect any
22 changes to the RTEP since mid 2014, correct?

23 A. When you say changes, what do you mean?

24 Q. So am I right in thinking that at the end

1 of the annual RTEP process, PJM identifies certain
2 transmission upgrades that will occur in the coming
3 years?

4 A. Yes.

5 Q. Those identified -- any transmission
6 upgrades that have been identified through the RTEP
7 process after mid 2014 would not have been included
8 in the generation deliverability analysis; is that
9 correct?

10 A. Yes.

11 Q. Okay. Generally speaking what role does
12 a load forecast play in a generation deliverability
13 analysis?

14 THE WITNESS: Could you repeat that
15 question again?

16 (Record read.)

17 A. The load forecast is one of the inputs so
18 that helps to determine what the loads will be across
19 PJM.

20 Q. Taking the generation deliverability
21 analysis associated with this transmission impact
22 study, if everything else stayed the same but the
23 load was forecasted to be higher than what was
24 actually used, would the reliability impacts of

1 Davis-Besse and Sammis be greater than what the study
2 results presented?

3 A. I don't know.

4 Q. Why don't you know?

5 A. Lots of things change and with the
6 modeling -- until you model it you don't know the
7 exact impact.

8 Q. Would you expect the -- if you were using
9 a different -- if you were projecting a higher load
10 than what was included in the generation
11 deliverability analysis, would you expect the
12 reliability impacts to be different than what's
13 reflected in the results of this transmission impact
14 study?

15 A. I don't know.

16 Q. If you held -- and even if you held all
17 of the other inputs constant but used a higher load,
18 would -- you wouldn't know if the transmission
19 impacts would be different?

20 A. No.

21 Q. Okay. Do you know which year's load
22 forecasts report PJM used for the 2019 base case
23 costs?

24 A. That would have been the 2014.

1 Q. 2014?

2 A. It would have been the latest for -- that
3 they would have identified in 2014.

4 Q. Okay. Great. Thank you. Is there
5 any -- going back to the question about if you were
6 using a different load forecast, is there an
7 additional piece of information that you would need
8 in order to be able to figure out if the reliability
9 impacts would be different?

10 A. Yes.

11 Q. And what information would that be?

12 A. You would need to know how large of an
13 increase was it, where the increases were, and other
14 changes that might have been associated with that.

15 Q. Okay. The timeframe for the generation
16 deliverability analysis is summer of 2019; is that
17 correct?

18 THE WITNESS: Can you repeat that again.

19 (Record read.)

20 A. Correct.

21 Q. Okay. So that means that any new
22 generation facility scheduled to be in service by
23 summer of 2019 would be included in the 2019 RTEP
24 base case, correct?

1 A. Can you rephrase that.

2 Q. Sure. Given that the timeframe is
3 summer, 2019, that necessarily means that new
4 generation facilities that are scheduled to be in
5 service by the summer of 2019 would be included in
6 the base case, correct?

7 A. No.

8 Q. Why not?

9 A. Well, what do you mean by "scheduled to
10 be in service?" PJM has a methodology for how they
11 handle that which is what is in the case and what is
12 not.

13 Q. And what's that methodology?

14 A. Methodology based on where they are in
15 the queue process, what studies they have signed.

16 Q. So would any -- any new generation
17 facilities that have signed a facilities study
18 agreement with PJM that is scheduled to be in service
19 by summer of 2019 would be included in the base case;
20 is that correct?

21 A. Yes.

22 Q. Okay. If a gen -- if a generation
23 facility had signed such a study but was scheduled to
24 be in service after summer of 2019, it would not be

1 included in the base case, correct?

2 A. Yes.

3 Q. Okay. And the same holds true for, is
4 it, interconnections study agreement? Are there
5 other circumstances besides where a facility study
6 agreement has been signed in which a future
7 generation facility would be included in the base
8 case?

9 MR. LANG: Objection.

10 A. Can you rephrase that again.

11 Q. Sure. Are there -- apart from those
12 generation facilities that have signed facility study
13 agreements with PJM, are there any others -- any
14 other future or planned generation facilities that
15 would be included in that base case, or is that
16 agreement the touchstone for whether it is or isn't
17 included in the base case?

18 THE WITNESS: Can you repeat that
19 question back to us.

20 (Record read.)

21 A. Yes. Those facilities are
22 interconnection agreements, those agreements.

23 Q. Okay. So if new generation facility had
24 signed an interconnection agreement and was scheduled

1 to be in service by summer 2019, it would be included
2 in the base case.

3 A. Yes.

4 Q. But if it was scheduled to be in service
5 after summer of 2019, it would not be included in the
6 base case.

7 A. Correct.

8 Q. Okay. Thank you. The generation
9 deliverability analysis assumes that Sammis and
10 Davis-Besse will retire before June 1, 2017; is that
11 correct?

12 A. Yes.

13 Q. Okay.

14 THE WITNESS: Can you say that again.

15 (Record read.)

16 A. No.

17 Q. Why is that not correct?

18 A. It's 2019 so it assumes before 2019 it's
19 retired, just not in service by 2019.

20 Q. Okay.

21 MR. OLIKER: I'm sorry. Could I have
22 that read back one more time.

23 (Record read.)

24 (EXHIBIT MARKED FOR IDENTIFICATION.)

1 Q. Mr. Phillips, you are being passed a
2 document that's been marked as Exhibit 3. This is a
3 response to Sierra -- to a discovery request SC Set
4 1-INT-5. Are you familiar with this document,
5 Mr. Phillips?

6 A. Yes. I've seen this.

7 Q. Okay. Are the responses provided in this
8 document factually accurate?

9 A. Yes.

10 Q. Okay. So would you agree with me for
11 both the generation deliverability analysis and the
12 load deliverability analysis, the assumed retirement
13 date for Sammis and Davis-Besse was prior to June 1,
14 2017?

15 A. Yes.

16 Q. Okay. Thank you. Now, when Mr. Gass
17 conducted the modeling associated with the generation
18 deliverability analysis, he started with the 2019
19 RTEP base case and then modeled three separate
20 retirement scenarios; is that correct?

21 A. I'm familiar with the Davis-Besse and
22 Sammis retirement scenario.

23 Q. Okay. And remodeled -- he modeled both
24 of those retirements separately as well as together;

1 is that correct?

2 MR. LANG: That's, objection, beyond the
3 scope of his testimony. You can answer if you know.

4 A. I don't know the details of what he did
5 on those.

6 Q. Okay.

7 (EXHIBIT MARKED FOR IDENTIFICATION.)

8 Q. Mr. Phillips, you have been passed a
9 document that's been marked as Exhibit 4. This is a
10 response to SC Set 1-INT-6. Are you familiar with
11 this document?

12 A. Yes, I believe I have seen this document.

13 Q. Okay. Is the information provided in
14 this response factually accurate?

15 MR. LANG: Again objection, beyond the
16 scope of his testimony. But you can answer if you
17 know.

18 A. I don't -- I don't know the details of
19 the other studies that Mr. Gass did.

20 Q. Okay. So is the only study that Mr. Gass
21 did that you are familiar with the one in which both
22 Davis-Besse and Sammis --

23 A. Yes.

24 Q. -- were assumed to be -- okay.

1 MR. LANG: Let him answer -- I mean, let
2 him finish the question, and then you can answer.

3 Q. In which they were both assumed to have
4 retired, correct?

5 A. Yes.

6 Q. And for the modeling performed for the
7 generation deliverability analysis, the assumed
8 retirement date for those plants was before June 1,
9 2017, correct?

10 A. Yes.

11 Q. Okay. Do you know how many generating
12 units are at the Sammis plant?

13 A. Seven.

14 Q. Okay. Do you know if Mr. Gass modeled
15 any scenarios in which only a subset of the Sammis
16 units retired?

17 A. No.

18 Q. No, you don't know?

19 A. I don't know.

20 Q. Okay. Let's take a brief hypothetical.
21 Let's suppose hypothetically that rather than
22 retiring both Sammis and Davis-Besse a generation
23 deliverability analysis was performed that assumed
24 that only a subset of the Sammis units retired, like

1 Sammis units 1 through 4. If the generation
2 deliverability analysis had modeled such a scenario,
3 would you expect the reliability impacts to be
4 different than those associated with retirement of
5 both Sammis and Davis-Besse?

6 MR. LANG: Objection, assumes facts and
7 is beyond the scope. You can answer.

8 A. I don't know.

9 Q. Would you be able to know without
10 performing a full steady state flow study?

11 A. No.

12 Q. Generally speaking when a larger amount
13 of capacity is retired, does that create greater
14 reliability impacts on the system?

15 A. I don't know.

16 Q. In the hypothetical I just laid out for
17 you, do you know of any reason as to why the impacts
18 might be lower than those associated with -- scratch
19 that.

20 Would you -- would you expect those
21 reliability impacts to be lower than those associated
22 with retirement of both Sammis and Davis-Besse?

23 MR. LANG: Objection.

24 A. Can you rephrase that question. I am not

1 sure what the question was.

2 Q. Sure. If we take a hypothetical in which
3 a generation deliverability analysis is modeling the
4 retirement of only Sammis units 1 through 4, would
5 you expect there would be fewer transmission
6 overloads than would result if both Sammis and
7 Davis-Besse retired?

8 A. I don't know.

9 Q. Is there a particular reason why you
10 wouldn't think they would be lower?

11 A. I don't know.

12 Q. Okay. Are you aware of whether the
13 generation deliverability analysis modeled any
14 scenarios in which the plants retired after June 1,
15 2017?

16 A. No.

17 Q. Okay. Apart from the modeling associated
18 with the generation deliverability analysis and the
19 load deliverability analysis for this case, are you
20 aware of any studies that model the transmission
21 impacts of retiring the Sammis plant?

22 MR. LANG: Objection, beyond the scope.

23 A. No.

24 Q. Okay. So the starting point for the

1 generation deliverability analysis was the 2019 RTEP
2 base case model, correct?

3 A. Yes.

4 Q. Before modeling the retirement scenario,
5 do you know if Mr. Gass made any changes to the load
6 levels of the buses that are -- were included in the
7 base case?

8 THE WITNESS: Could you repeat that?

9 (Record read.)

10 A. Can you rephrase that.

11 Q. Sure. Can you tell me what --

12 A. When he made changes, what do you mean by
13 that?

14 Q. So the 2019 RTEP base case includes an
15 array of assumptions, right?

16 A. Correct.

17 Q. And Mr. Gass took that base case and then
18 modeled a retirement scenario associated with the
19 retirement of Sammis and Davis-Besse, correct?

20 A. Yes.

21 Q. So what I am curious in is what -- is
22 whether Mr. Gass made any changes to the assumptions
23 of the base case before modeling the retirement
24 scenario. Does that provide the clarification?

1 A. No. Changes to?

2 Q. Changes to the assumptions that were
3 included in the base case.

4 A. No, he did not make changes to the
5 assumptions in the base case.

6 Q. So he -- so other than changes that were
7 specific to the retirement of Sammis and Davis-Besse,
8 he didn't change anything else in the base case.

9 A. No.

10 Q. Okay. And you confirmed that with
11 Mr. Gass or Mr. Cunningham?

12 A. Yes.

13 Q. Okay. Now, for the retirement scenario,
14 there were a series of contingencies that were
15 modeled; is that correct?

16 A. Yes.

17 Q. And for the generation deliverability
18 analysis, those contingencies included single tower
19 bus and line fault with stuck breaker contingencies;
20 is that correct?

21 A. Yes.

22 Q. And the only contingencies that were
23 modeled were located within the ATSI zone; is that
24 correct?

1 A. No.

2 Q. Okay. Why is that not correct?

3 A. They also modeled for the -- it was the
4 N-1-1, the one where they ran limited contingencies
5 in the ATSI zone.

6 Q. I'm sorry. Are you looking at a portion
7 of your testimony?

8 A. No, no. I just know.

9 Q. And so those contingencies extended
10 outside the ATSI zone?

11 MR. LANG: Objection.

12 A. Yeah. Rephrase.

13 Q. So if I could direct you to page 5 of the
14 direct testimony that you've adopted.

15 A. Yes.

16 Q. On lines 22 and 23 -- through 23, it
17 states "Only contingencies within the ATSI Zone were
18 studied." Is that your testimony?

19 A. That was referencing for N-1-1
20 contingencies.

21 Q. And those contingencies were performed
22 for the generation deliverability analysis?

23 A. Yes.

24 Q. Okay. But other contingencies -- the

1 other contingencies were modeled -- with respect to
2 the other types of contingencies the modeling looked
3 outside of the ATSI zone.

4 A. Yes.

5 Q. Okay. Generally speaking when a plant
6 retirement is being modeled in a steady state load
7 flow analysis, the modeling runs need to assume that
8 other generating units will generate at a higher
9 level, correct?

10 A. Can you -- I'm not -- rephrase that.

11 Q. Sure. So if you have a steady state load
12 flow study that you are going to perform and you are
13 taking some generation out of that study, there needs
14 to be a way to replace it in order for the model to
15 actually solve, right?

16 A. Yes.

17 Q. Okay. And that's sort of a necessary
18 assumption in order for the load flow study to remain
19 is this steady state, correct?

20 A. Yes.

21 Q. Okay. So in modeling the retirement of
22 Sammis and Davis-Besse for the generation
23 deliverability analysis, Mr. Gass or Mr. Cunningham
24 had to select other generating units to operate at a

1 higher level; is that correct?

2 A. Yes.

3 Q. Okay. Do you know which specific
4 generating units were dispatched at a higher level?

5 A. They scaled them -- scaled the remaining
6 generating units up uniformly to cover the load
7 reduction.

8 Q. And when you say "remaining generating
9 units" --

10 A. Generators in the model besides Sammis
11 and Davis-Besse.

12 Q. Okay. So does that mean they scaled up
13 every generating unit in the eastern interconnection?

14 A. It was scaled up, all the generators that
15 PJM had in the model.

16 Q. Okay. Do you know by how much
17 percentagewise those were scaled up?

18 A. No.

19 Q. Okay. But it was a uniform scaling for
20 every generating unit.

21 A. Yes.

22 Q. Okay. So going back to the inputs for
23 the modeling runs associated with the generation
24 deliverability analysis, Mr. Gass or Mr. Cunningham

1 did change the assumed generation for all of the
2 units; is that correct?

3 MR. LANG: Objection, mischaracterizes
4 the testimony. Go ahead.

5 A. Yes. The methodology would be that you
6 would take the generation that was in there and would
7 remove something. Part of the process then is you
8 scale the other generators up.

9 Q. Okay. And that's what they did --

10 A. Yes.

11 Q. -- for this analysis.

12 A. Yes.

13 Q. Okay. Apart from that change, those two
14 changes and assumptions, the retirement of Sammis and
15 Davis-Besse and the scaling up of the other
16 generators, nothing else was changed from the 2019
17 RTEP base case.

18 A. No.

19 Q. Okay. Shifting gears to the load
20 deliverability analysis, that was performed sometime
21 in 2014; is that correct?

22 A. Yes.

23 Q. Okay. And that analysis was based on the
24 RPM 2017-2018 base case model, correct?

1 A. Yes.

2 Q. Okay. And just to confirm PJM did not do
3 any -- did not directly do any modeling associated
4 with the load deliverability analysis, correct?

5 A. Can you rephrase that.

6 Q. Sure. When Mr. Gass was -- Mr. Gass
7 performed all of the modeling associated with the
8 load deliverability analysis; is that correct?

9 A. For -- concerning -- can you rephrase to
10 try to be clear what you are asking.

11 Q. Yeah. So the load deliverability
12 analysis involved a series of modeling runs; is that
13 accurate?

14 A. I'm still trying to figure out what --
15 what you are referring to.

16 Q. Okay. Could you maybe describe in
17 general terms how the load deliverability analysis
18 for this case --

19 A. Okay. You are referring to this case;
20 this transmission impact study?

21 Q. Yes.

22 A. Yes, Mr. Gass did that.

23 Q. And he performed all the modeling.

24 A. Yes.

1 Q. Okay. Under Mr. Cunningham's direction.

2 A. That's correct.

3 Q. Okay. Just stepping back in terms of the
4 assumption about scaling up all the other generation,
5 is that -- is there like a manual or a guide that you
6 referred to to verify that was the proper way to
7 conduct the generation deliverability analysis?

8 A. I don't know. I don't know. I don't
9 remember.

10 Q. Okay. Thank you. Do you know when the
11 RPM 2017-2018 base case model was developed?

12 A. That would have been 2014.

13 Q. Okay. Do you know when in 2014?

14 A. Mid year.

15 Q. Would it have been developed before the
16 base residual auction in May of 2014?

17 A. Yeah, I don't remember the exact timing
18 but that's usually what that is for.

19 Q. Okay. And the data that was collected
20 into the RPM 2017-2018 base case was necessarily
21 collected prior to mid 2014; is that correct?

22 A. Yes. The data would be collected before
23 mid 2014, collected the data, yes.

24 Q. And so the load deliverability analysis

1 for this case would not have reflected any changes to
2 the generation queue that occurred since mid 2014; is
3 that correct?

4 A. Yes.

5 Q. And it wouldn't -- it would not reflect
6 any changes to the RTEP in terms of transmission
7 projects that were planned for since mid 2014?

8 A. Yes.

9 Q. Do you know which years load forecasts
10 PJM used for the RPM 2017-2018 base case model?

11 A. 2014.

12 Q. So the load deliverability analysis would
13 not reflect any changes to PJM's load forecast that
14 would have occurred since mid 2014; is that correct?

15 A. Yes.

16 Q. And the timeframe for the load
17 deliverability analysis is the 2017-2018 PJM RPM
18 planning year; is that correct?

19 A. Yes.

20 Q. And so for plant generation units -- or
21 plant generation facilities that have signed a
22 facilities study agreement or an interconnection
23 agreement with PJM that are scheduled to be in
24 service after May 31, 2018, would not be included in

1 that base case, correct?

2 THE WITNESS: Could you repeat that
3 again.

4 (Record read.)

5 A. Yes.

6 Q. Okay. And the load deliverability
7 analysis assumes that both Sammis and Davis-Besse
8 retire before June 1, 2017, correct?

9 A. Yes.

10 Q. Okay. For the load deliverability
11 analysis did Mr. Gass model any scenarios in which
12 only a subset of the Sammis units were retiring?

13 A. I don't know.

14 Q. Okay. Do you know if Mr. Gass modeled
15 any scenarios in which only Davis-Besse or only
16 Sammis retired?

17 MR. LANG: We are beyond the scope again
18 so objection. You can answer if you know.

19 A. I know no details other than the one
20 discovery request that referred to that, but I know
21 no details.

22 Q. And you are referring to what's been
23 marked as Exhibit 4.

24 A. No.

1 Q. What are you referring to?

2 A. Exhibit 3. You know what? That is not
3 that one. Yeah, I guess it was 4 then, yeah. I am
4 looking at the wrong one.

5 Q. Okay. And that's the only knowledge you
6 have --

7 A. That's the only knowledge I have of.

8 Q. Of whether Davis-Besse and Sammis were
9 modeled separately?

10 A. Yes.

11 Q. Okay. So, again, the starting point for
12 the load deliverability analysis was the RPM
13 2017-2018 base case model, correct?

14 A. Yes.

15 Q. Before modeling the retirement of Sammis
16 and Davis-Besse, did Mr. Gass make any changes to the
17 base case model?

18 A. No.

19 Q. Okay. And then the only changes that
20 were made for purposes of the analysis was to drop
21 Davis-Besse and Sammis out of the model and then
22 scale up the generation of all of the other units?

23 A. Yes.

24 Q. Okay. And for the load deliverability

1 analysis, the only contingencies that were modeled
2 were single contingencies; is that correct?

3 A. Yes.

4 Q. And were those single contingencies
5 modeled only for the ATSI zone or for the entire PJM
6 region?

7 A. I don't remember.

8 Q. Is there anything that would refresh your
9 recollection?

10 A. Not at the moment.

11 Q. Was that information -- was the
12 information regarding the contingencies model for the
13 load deliverability -- scratch that.

14 Can you tell me how you learned about how
15 contingencies were modeled in the load deliverability
16 analysis?

17 A. Can you rephrase that.

18 Q. Sure. So looking at page 5 of your
19 direct testimony, lines 11 through 13, states "The
20 study also included a load deliverability analysis
21 for the ATSI and Cleveland Locational Deliverability
22 Areas ("LDAs") using the PJM RPM 2017/2018 models and
23 associated single contingencies." Is that your
24 testimony?

1 A. Yes.

2 Q. Okay. And what details do you have about
3 the contingencies that were modeled for that
4 analysis?

5 A. I would review that with Gavin, what
6 contingencies they ran.

7 Q. Okay. So any knowledge you have about
8 the contingencies associated with this analysis came
9 through your verbal discussions with Mr. Cunningham?

10 A. Yes.

11 Q. You've reviewed the results of the
12 overall transmission impact study, correct?

13 A. Yes.

14 Q. Okay. And that study combines the
15 results of both the generation deliverability
16 analysis and the load deliverability analysis; is
17 that correct?

18 A. Yes.

19 Q. Have you separately reviewed the results
20 of just the generation deliverability analysis?

21 A. No.

22 Q. Have you separately reviewed the results
23 of just the load deliverability analysis?

24 A. No.

1 Q. So you only reviewed the final collected
2 results for the overall study; is that correct?

3 A. Yes.

4 Q. Okay. Did you take any steps to verify
5 the accuracy of the results of the generation
6 deliverability analysis?

7 A. Yes.

8 Q. Okay. What steps did you take?

9 A. The steps to determine it was accurate
10 was reviewing with Gavin the methodology that they
11 used, the cases that they used, and the process that
12 they went through to run the studies.

13 Q. Okay. Anything else beyond discussing
14 those issues with Mr. Cunningham?

15 A. No.

16 Q. Did you take any steps to verify the
17 accuracy of the results of the load deliverability
18 analysis?

19 A. Yes.

20 Q. And what steps were those?

21 A. Reviewing with Mr. Cunningham the models
22 they used, the process they used, and the methodology
23 they used to run the studies.

24 Q. Okay. And you've not personally reviewed

1 the reports generated by the TARA model; is that
2 correct?

3 A. No.

4 Q. Okay. Now, if I understand it correctly,
5 once the load deliverability and generation
6 deliverability -- kind of a mouthful. Once the load
7 deliverability and generation deliverability analyses
8 were completed, the next step in the transmission
9 impact study was to estimate the costs of upgrading
10 the overloaded facilities; is that correct?

11 A. Yes.

12 Q. And those transmission costs were
13 estimated using PJM per-unit cost estimates, correct?

14 A. Yes.

15 Q. Where exactly did those per-unit cost
16 estimates come from?

17 A. The per-unit cost estimates came from
18 numbers that PJM had provided for an EIPC study.

19 Q. EIPC stands for?

20 A. It was Eastern Interconnection Planning
21 Collaboration, I think is what the initials stand
22 for.

23 Q. Okay. Is there a particular document
24 that presents those per-unit cost estimates?

1 A. Yes.

2 Q. Which document is that?

3 A. If you would look in my Exhibit 1 you
4 handed me.

5 Q. Yep.

6 A. It references the tables that were used.
7 Pages 3, 4.

8 Q. So the tables on pages 3 and 4 of Exhibit
9 1, are these -- were these directly pulled from a PJM
10 document?

11 A. No.

12 Q. Okay. We will get to these in a moment,
13 but can you tell me what the underlying PJM document
14 was?

15 A. They were pulled from the EIPC document
16 which PJM provided the information to EIPC.

17 Q. Okay. Do you know the title of that
18 document that PJM provided to EIPC?

19 A. No.

20 Q. Do you know if that document is publicly
21 available?

22 A. I don't know.

23 Q. Okay. But the information provided --
24 scratch that.

1 Do you have a copy of that -- do you
2 personally have a copy of that PJM document?

3 MR. LANG: Just objection. I don't think
4 the question is clear but go ahead.

5 A. Yeah. Can you rephrase that.

6 Q. Have you -- have you personally reviewed
7 that PJM document?

8 MR. LANG: Objection again.

9 A. Yeah.

10 Q. So we have been talking about a PJM
11 document that was provided to EIPC.

12 MR. LANG: And I think you have been
13 asking a question about a PJM document that you are
14 assuming exists. We haven't been talking about one
15 yet.

16 A. I was referring --

17 MR. LANG: We have been talking about an
18 EIPC document.

19 A. -- to an EIPC document.

20 Q. That includes information that was
21 provided by PJM; is that correct?

22 A. Yes.

23 Q. Okay. Have you personally reviewed the
24 EIPC document?

1 A. Yes.

2 Q. Okay. And is that -- are the tables on
3 the third and fourth pages of your workpapers drawn
4 directly from the EIPC document?

5 A. Yes.

6 Q. And what's the name of that document?

7 A. I don't remember the name.

8 Q. Do you know when that document was
9 created?

10 A. I don't remember.

11 Q. You don't remember?

12 A. I don't remember.

13 Q. Okay. Do you have that EIPC document?

14 A. The tables are in Exhibit 1 here.

15 Q. Okay. These were cut and pasted from
16 that document?

17 A. Yes.

18 MR. SOULES: As an aside, as a courtesy,
19 I would respectfully request if opposing counsel
20 would provide us a link to the EIPC document after
21 the deposition.

22 MR. LANG: We will take it under
23 consideration.

24 MR. SOULES: Okay. Thank you.

1 Q. The tables on the third and fourth pages
2 of your workpapers were used to develop the per-unit
3 cost estimates that were used for the transmission
4 impact study, correct?

5 A. Yes, those were used.

6 Q. Okay. Can you describe for me how these
7 tables were used to develop the per-unit cost
8 estimates.

9 A. The tables outline by voltage the cost
10 per amount, and it's broken into different regions.
11 And based on those costs, those are used to develop
12 the per-unit costs.

13 Q. Okay. So looking at the third page, the
14 table that's entitled "Transmission Line Cost
15 Estimate Matrix-New Facility." Do you see that?

16 A. Yes.

17 Q. Okay. Was this table used to develop the
18 per unit cost estimate for rebuilds?

19 A. Yes.

20 Q. Okay. Can you walk me through how you
21 used this table to develop that estimate?

22 A. Yes. So, for example, if you would take
23 the bottom table where it says new 500 kV, cost per
24 mile is 3.45 million. And you would go over to where

1 the facility was located and then you would use --
2 use the multiplier there to multiply times the base
3 cost to determine the per-unit cost amount.

4 Q. Okay. And for the Sammis plant which
5 regional multiplier did you use?

6 A. Can you rephrase that.

7 Q. Which -- so we are looking at the 500
8 kilovolt line or -- yeah, line, right, second to last
9 line.

10 A. Uh-huh, uh-huh.

11 Q. You used one of these regional
12 multipliers to develop the per-unit cost estimate; is
13 that correct?

14 A. Yeah. I am not sure exactly. You need
15 to rephrase. I'm not.

16 MR. SOULES: Question for counsel, are
17 the --

18 MR. LANG: Is this tying into page 1?
19 Are you going to ask if it's page 1 related of the
20 worksheet?

21 MR. SOULES: Yeah, yeah, about a portion
22 of page 1.

23 MR. LANG: Yeah, okay.

24 MR. SOULES: The question is is the right

1 half of page 1 and page 2 confidential?

2 MR. LANG: The -- let's see, the first,
3 second, third, fourth rows -- I want to confirm
4 something here. Yeah. I'm sorry, not rows, columns,
5 so the first column "Overloaded Facilities," second
6 column "X," third column "Distance," fourth column
7 "Costs," fifth column "Type of Upgrade" is not. Are
8 you talking about this little thing?

9 MR. SOULES: Yeah. Is this confidential?

10 THE WITNESS: No.

11 MR. LANG: Those numbers are public.

12 THE WITNESS: Yeah. That would be based
13 on EIPC.

14 MR. LANG: The per unit table, chart,
15 whatever it is, that's public.

16 MR. SOULES: Okay. All right. Great.

17 Q. So, Mr. Phillips, could you maybe explain
18 how you came up with --

19 MR. SOULES: And the same is true about
20 the same small table on the second page?

21 MR. LANG: I believe so. Do you know?

22 THE WITNESS: Yes.

23 MR. SOULES: That's public?

24 MR. LANG: That's public information?

1 THE WITNESS: Yes. That would be the
2 same thing, yes.

3 Q. Okay. Great. So could you describe for
4 me how you used the table on the third page to come
5 up with the costs -- the per-unit cost estimates
6 in -- that are listed on the second page of your
7 workpapers.

8 A. So this page here.

9 Q. Yes.

10 A. Okay. So if you would take the voltage,
11 you would go to the chart which is this page.

12 Q. The third page, yeah.

13 A. Yeah, third page, and you would get the
14 voltage and you would come across to where it says
15 miles or cost per mile so that would be one number
16 and you would come on across the chart to the
17 appropriate area of PJM for the facility that you are
18 looking at and then you would pick the facility and
19 the appropriate area and we used the multiplier there
20 times the dollars per mile to get the per-unit mile
21 costs.

22 Q. And which areas of PJM were you referring
23 to when you ultimately developed the per-unit cost
24 estimate?

1 A. It varied.

2 Q. It varied, okay. So for Sammis -- it
3 varied based on the location of the facility, got it.
4 And you did that for each of the transmission
5 facilities that are discussed in your testimony.

6 A. Yes.

7 Q. Okay. Did you create -- and so
8 ultimately there were four different regions -- oh,
9 wait. You used the single multiplier for the
10 138-kilovolt lines; is that correct?

11 A. Could you rephrase that?

12 Q. To come up with the per-unit cost
13 estimate for rebuilding a 138-kilovolt transmission
14 line, you assumed that those per-unit costs were 1.7
15 million; is that correct?

16 A. No.

17 Q. Why is that not correct?

18 A. I am not sure what you are looking at.

19 Q. I am looking at the second page of your
20 workpapers.

21 A. Yes.

22 Q. The small table.

23 A. Uh-huh.

24 Q. It says 138-kilowatt 1.87 million.

1 A. Yes, 1.87.

2 Q. And you used that per-unit cost estimate
3 for every --

4 A. They would have been used for the 138 kV
5 facilities.

6 Q. Okay. Without any regional variation.

7 A. No.

8 Q. Okay. You know, I am concerned we may
9 get to a point where we could talk about something
10 that is confidential, so maybe we will move on, and
11 we can chat about this a little more in the
12 afternoon.

13 MR. LANG: It might work with an example,
14 and we are looking for a break time. It seems like
15 you are shifting to something else. Would this --

16 MR. SOULES: Yeah, we can take a break
17 now.

18 MR. LANG: Why don't we take a break
19 here. Let's do 10 minutes.

20 (Recess taken.)

21 Q. Welcome back, Mr. Phillips. So I would
22 like to talk for a few moments about the adjustments
23 to Mr. Cunningham's direct testimony that you discuss
24 on page 4 of your supplemental testimony. I think

1 we've established earlier that -- should we? I think
2 we established earlier that you had made some
3 adjustments to the results of the transmission impact
4 study; is that correct?

5 A. Yes.

6 Q. Okay. So looking at page 4 of your
7 supplemental testimony, starting on line 16, it
8 states "The transmission impact study identified the
9 need for two terminal equipment upgrades estimated to
10 cost a total of \$20 million. Using updated
11 information, I estimate the cost of the upgrades to
12 be \$3.5 million." That's your testimony, correct?

13 A. Yes.

14 Q. What updated information are you
15 referring to here?

16 A. I'm referring there that the costs that
17 were used were too high, so I used more recent
18 information on what similar upgrade costs for that
19 type of equipment would cost.

20 Q. What -- what more recent information
21 specifically were you relying on?

22 A. More recent studies done within -- from
23 PJM studies.

24 Q. Okay. Do you recall the names of those

1 studies?

2 A. No.

3 Q. But all of the updated information would
4 have come from PJM studies; is that correct?

5 A. Yes.

6 Q. Okay. Starting on line 18 it states "I
7 would use different per-mile cost estimates for
8 reconductoring three of the 345 kV facilities,
9 resulting in total reduced costs of \$20 million."
10 That's your testimony, right?

11 A. Yes.

12 Q. Why do you disagree with Mr. Cunningham's
13 per-mile cost estimates --

14 A. The --

15 Q. -- for those facilities? I'm sorry.

16 A. For those three facilities the per-unit
17 costs that was used did not match up with the table.

18 Q. The table on the third page of Exhibit 1?

19 A. Yes, yeah.

20 Q. And was that because Mr. Cunningham's
21 per-mile cost estimates applied an incorrect
22 geographic region?

23 A. No.

24 Q. Could you describe -- do you know what

1 sources Mr. Cunningham was relying on for his
2 per-unit cost estimates?

3 A. He was using the EIPC.

4 Q. So was he using the same table that you
5 were using that's listed on the third page of --

6 A. Yes, yes.

7 Q. Okay.

8 MR. LANG: Let him finish the question.

9 Q. And so how did you end up with a
10 different estimate than Mr. Cunningham?

11 A. When I looked at the voltage, I saw
12 multipliers should be used was \$1.5 million for 345.

13 Q. And Mr. Cunningham used a different
14 multiplier?

15 A. Yes.

16 Q. Do you know what multiplier he used?

17 A. Yes.

18 Q. And which multiplier did he use?

19 A. 2.1.

20 Q. 2.1 million?

21 A. Uh-huh.

22 Q. Okay. Starting on line 20 of the fourth
23 page of your supplemental testimony, it states "I
24 would use a different multiplier for a fourth 345 kV

1 facility, resulting in increased costs of
2 \$31 million." That's your testimony, correct?

3 A. Yes.

4 Q. And why did you disagree with
5 Mr. Cunningham's estimate for that facility?

6 A. That one he had an extra multiplier of .6
7 in the number which made it too low.

8 Q. Was that extra multiplier drawn from the
9 table listed on the third page of Exhibit 1?

10 A. I don't know.

11 Q. Okay. Thank you. I believe earlier you
12 had stated that you did not review the modeling files
13 associated with the load deliverability and
14 generation deliverability analyses; is that correct?

15 A. Can you rephrase that.

16 Q. Yes. You did not review the modeling
17 files associated with the generation deliverability
18 analysis, correct?

19 A. I'm not sure what you mean by modeling
20 files.

21 Q. You did not directly work with the
22 modeling -- you did not directly review the modeling
23 results for the generation deliverability analysis,
24 correct?

1 A. That's not correct.

2 Q. Why is that not correct?

3 A. The results, I reviewed the results. The
4 results, I saw the results for the generation
5 deliverability for the models.

6 Q. You didn't work directly with the actual
7 load flow modeling files, correct?

8 A. Can you rephrase.

9 Q. Sure. So the generation deliverability
10 analysis has a series of modeling files associated
11 with it, correct?

12 A. That's correct.

13 Q. And you have not directly reviewed or
14 worked with those files, correct?

15 A. I'm still -- rephrase.

16 Q. Can you tell me what -- what's confusing
17 you about that?

18 A. Yeah. When you say work directly with
19 the files.

20 Q. You didn't run the modeling program.

21 A. I did not run the software.

22 Q. Okay. And you did not select -- you did
23 not change the assumptions from the base case in
24 order to run that analysis, correct?

1 A. Can you rephrase that again.

2 Q. The generation deliverability analysis
3 changes some of the assumptions that were in the PJM
4 RTEP base case, right?

5 A. No.

6 Q. Didn't the generation deliverability
7 analysis remove Davis-Besse and Sammis --

8 A. Yes.

9 Q. -- from the generation? And that
10 analysis also increased the generation of all the
11 other generating units in the model, right?

12 A. Yes.

13 Q. Okay. And you personally did not perform
14 that modeling or work with the modeling software,
15 right?

16 A. I did not run the software.

17 Q. Okay. And you did not review the reports
18 generated by the model, correct?

19 A. When you say reports, can you rephrase.

20 Q. For the -- does the analysis involve
21 running a series of -- or doing a series of modeling
22 runs?

23 A. Yes.

24 Q. Okay. And those modeling runs generate

1 reports.

2 A. Yes.

3 Q. And you did not review the reports.

4 A. I reviewed the summary of the reports for
5 the overloads.

6 Q. Okay. But you didn't review the raw
7 modeling outputs themselves, correct?

8 A. When you say "raw."

9 Q. Prior to being distilled into the summary
10 results.

11 A. Yes.

12 Q. Do you know if those modeling files have
13 been provided to any of the parties in this case?

14 A. I don't know.

15 Q. Do you know if any of the modeling files
16 associated with the load deliverability analysis have
17 been provided to any of the parties in this case?

18 A. I don't know.

19 Q. Okay. Now, in your -- in addition to
20 adjusting some of the results of Mr. Cunningham's
21 transmission impact study, you also estimated the
22 costs of upgrading the transmission facilities if
23 each of the lines were rebuilt instead of
24 reconductored, correct?

1 A. Yes.

2 Q. And for that scenario you estimated that
3 the costs of those upgrades would be almost \$1.1
4 billion, correct?

5 A. Yes.

6 Q. Okay. What steps specifically did you
7 take to generate that estimate?

8 A. I used the results from the studies which
9 shows the lines that were overloaded and then instead
10 of using the reconductor costs took those same
11 facilities and used the multipliers for rebuilding
12 those lines.

13 Q. Okay. Did you conduct any load flow
14 studies to develop that revised cost estimate?

15 MR. LANG: Objection. Go ahead.

16 A. Yeah. Can you rephrase that again.

17 Q. Did you perform any additional load flow
18 modeling in generating the \$1.1 billion estimate?

19 MR. LANG: Objection.

20 A. Yeah, I am still not.

21 Q. So there was -- there was a certain
22 amount of modeling that went into the results
23 presented in Mr. Cunningham's direct testimony,
24 correct?

1 THE WITNESS: Can you repeat that.

2 (Record read.)

3 A. What do you mean by "modeling"?

4 Q. Load flow modeling. Let's take a step
5 back. So you -- when you were developing the \$1.1
6 billion estimate, you reviewed the results of the
7 transmission impact study that Mr. Cunningham had
8 led, correct?

9 A. I reviewed the model that was provided by
10 PJM, reviewed the assumptions that the team had used,
11 Gavin's team had used, and the process was used and
12 methodology that was used, yes.

13 Q. When you said you reviewed the model,
14 what model are you referring to?

15 A. I'm referring to the models that we used
16 that was provided by PJM.

17 Q. Okay. And what sort of review did you --
18 what did that review look like?

19 A. That review was confirming they used the
20 latest models as provided by PJM which means it had
21 all the proper assumptions in it and all the latest
22 correct information in it.

23 Q. Okay. But you didn't sit down in front
24 of a computer with TARA and look at those input

1 files, did you?

2 A. No.

3 Q. Okay. And did you -- was the principal
4 difference between Mr. Cunningham's results and your
5 results the assumption about rebuilding the
6 transmission lines as opposed to reconductoring them?

7 A. Can you rephrase that.

8 Q. Sure. If -- for all those speaking did
9 you perform any steady state load flow studies
10 yourself in preparing your testimony for this case?

11 A. What -- you need to rephrase. I am not
12 following.

13 Q. Okay. I think what we'll do is we'll
14 punt this discussion to the confidential section, and
15 then we can use a specific example. So we will move
16 on from this, but broadly speaking is it your opinion
17 that it's likely that all of the transmission lines
18 discussed in your testimony will need to be rebuilt?

19 THE WITNESS: Can you repeat that.

20 (Record read.)

21 A. Can you rephrase that.

22 Q. Sure. So your supplemental testimony
23 discusses what I believe you refer to as a
24 conservative estimate for the transmission upgrades

1 associated with the retirement of Davis-Besse and
2 Sammis, correct?

3 A. Yeah. Do you have a specific space --
4 place to refer to that you are -- just make sure I am
5 on the same page with you.

6 Q. Sure, sure. Looking at page 7 of your
7 supplemental testimony starting at line 16. The
8 question was posed "What do you mean when you
9 reference the transmission impact study's \$436.5
10 million cost estimate as conservative," and then you
11 provide an answer to that.

12 A. Okay. I see that.

13 Q. So is it fair to say that in your opinion
14 the \$436.5 million estimate is conservative in your
15 opinion?

16 A. Yes.

17 Q. Okay. And then you performed an
18 additional calculation assuming that all of the lines
19 were rebuilt instead of reconductored and estimated
20 in that scenario the upgrades would cost nearly \$1.1
21 billion, correct?

22 A. Yes.

23 Q. Okay. Do you think that scenario is
24 likely?

1 A. Yes.

2 Q. You think it's likely that all of those
3 transmission lines will need to be rebuilt as opposed
4 to being reconductored.

5 A. More likely as opposed to being all
6 reconductored, yes.

7 Q. Okay. What's the basis for that opinion?

8 A. That normally when we have lines that are
9 reconductored, there's additional rebuild work that
10 has to be done.

11 Q. So is it fairly unusual for a
12 transmission line that needs to be upgraded to be
13 just reconductored?

14 A. Yeah. Just nothing done but
15 reconductoring, yes.

16 Q. Is it common -- if a series of
17 transmission upgrades are being performed, typically
18 is some portion of those lines reconductored as
19 opposed to being rebuilt?

20 A. Probably more often than not when we
21 reconductor, there is some rebuilds required.

22 Q. So is it fair to say there is usually a
23 mix of rebuilds and reconductors?

24 A. Well, the rebuilds would include

1 reconductoring, that's what would drive the rebuilds.

2 Q. So is it unusual to -- for a transmission
3 line to be upgraded solely through reconductoring?

4 A. Can you rephrase that.

5 Q. You have a fair amount of experience with
6 transmission upgrades for FirstEnergy's transmission
7 system.

8 A. Yes.

9 Q. Is it rare for a transmission upgrade to
10 only include reconductoring?

11 A. Can you rephrase that.

12 Q. If you were going to look, say in the
13 aggregate you were looking at transmission line
14 upgrades in a service territory, the FirstEnergy
15 service territory, over the last three years. Could
16 you put a ballpark percentage on how many -- on what
17 percentage of those transmission line upgrades would
18 only involve reconductoring?

19 A. I don't know.

20 Q. Did any of them only involve
21 reconductoring?

22 A. I don't know.

23 Q. Okay. Let's assume hypothetically,
24 shifting gears a little bit, let's assume

1 hypothetically that Sammis and Davis-Besse were to
2 retire and the overloaded facilities identified in
3 the transmission impact study were going to be
4 upgraded. Is it your opinion that 82 percent of
5 those transmission upgrade costs would be allocated
6 to the companies' customers?

7 A. Can you rephrase that again.

8 Q. Sure. So you understand the basic
9 hypothetical what's assumed in the transmission
10 impact study comes true. Sammis and Davis-Besse both
11 retire and all of the transmission facilities
12 identified in the study need to be upgraded. You
13 follow me so far?

14 A. Yes.

15 Q. Okay. In that circumstance is it your
16 opinion that 82 percent of the costs of those
17 upgrades would be allocated to the companies'
18 customers?

19 THE WITNESS: Can you repeat that back.

20 (Record read.)

21 A. I don't know.

22 Q. Did you offer that opinion in your
23 written supplemental testimony?

24 A. Can you refer me to where you are

1 referring to.

2 Q. I can tell you that there is a reference
3 to 82 percent on the 10th page of your written
4 testimony.

5 MR. SOULES: Could we have the question
6 reread?

7 (Record read.)

8 A. Yeah, I am not understanding what I read
9 in my testimony and what you are asking.

10 Q. The 82 percent figure that's referenced
11 on the 10th page of your testimony is referring to
12 the allocation of costs associated with the
13 approximately 2,400 megawatts of coal plant
14 retirements from between 2012 and 2015, correct?

15 A. Yes.

16 Q. Do you think it's fair to extrapolate
17 based on that historical experience that 82 percent
18 of the costs associated with the retirement of Sammis
19 and Davis-Besse would be allocated to the companies'
20 customers?

21 A. I'm -- can you rephrase that again.

22 Q. Sure. Does the fact that 82 percent of
23 the costs associated with those earlier retirements
24 were allocated to the companies' customers

1 necessarily mean that 82 percent of the costs
2 associated with the retirement of Sammis and
3 Davis-Besse would be allocated to the companies'
4 customers?

5 THE WITNESS: Can you repeat that back,
6 what he said.

7 (Record read.)

8 A. Without knowing the exact facilities, I
9 think that's a good estimate for what could occur
10 based on what we saw with the lake plants.

11 Q. You do know the exact facilities though,
12 correct?

13 A. Yes, but.

14 Q. So given that you do know the exact
15 facilities, do you think that it's reasonable to
16 assume that 82 percent of those transmission upgrade
17 costs associated with Sammis and Davis-Besse would be
18 allocated to the companies' customers?

19 A. Let me rephrase, I don't know the exact
20 facilities. We've identified facilities that are
21 overloaded. As I think I indicated in my testimony,
22 the final exact facilities that are determined will
23 be done when PJM does their study and determines what
24 exactly the best solutions are which could involve

1 building new facilities in addition to rebuilding
2 lines.

3 Q. Okay. And that's what you meant by
4 without knowing the exact facilities.

5 A. Yes.

6 Q. Okay. So the information that you
7 currently know, you think it's reasonable to assume
8 that 82 percent of the costs associated with the
9 transmission upgrades required by the retirement of
10 Sammis and Davis-Besse would be allocated to the
11 companies' customers?

12 MR. LANG: Objection, asked and answered.
13 You can tell him again.

14 A. Yeah. Without having done any analysis,
15 I think that's a good estimate for what you could see
16 for retirements.

17 Q. And what are you relying on for that
18 opinion? What are you relying on for the opinion you
19 have just offered?

20 A. Opinion on?

21 Q. 82 percent being a reasonable assumption.

22 A. Oh, with no analysis -- exact analysis
23 done, then I think you would have to look at
24 something from experience that's occurred and recent

1 experience has been some of the upgrades -- or
2 retirements have occurred that we referred to
3 previously.

4 Q. And you think the -- and you are
5 referring to the 2,400 megawatts of retirements.

6 A. Yes.

7 Q. And you think it's reasonable to
8 extrapolate from the cost allocations associated with
9 the retirement of those plants to what the cost
10 allocation would be if Sammis and Davis-Besse
11 retired?

12 A. With no analysis done I think that could
13 be used as an estimate, yes.

14 Q. And you haven't performed any such
15 analysis, correct?

16 A. Yeah, I do not know what the final
17 facilities will be.

18 Q. So the answer to my question is, yes,
19 you've not performed any analysis, correct?

20 A. Analysis -- can you rephrase when you
21 refer to "analysis."

22 Q. I was trying to be consistent with what
23 you had said before. I think you said without any
24 analysis -- you had offered the opinion that without

1 any analysis it was reasonable to assume that
2 82 percent of the costs associated with the
3 retirement of Sammis and Davis-Besse would be
4 allocated to the companies --

5 A. Allocation analysis, did an analysis on
6 what an allocation would be.

7 Q. Okay. And you have not performed an
8 allocation analysis.

9 A. No.

10 Q. Okay. Why didn't you perform an
11 allocation analysis?

12 A. Because I am not exactly sure what the
13 exact facilities will be. They indicate I think it
14 will be a combination of new facilities, rebuilt
15 facilities.

16 Q. If -- if it turned out that the
17 facilities identified in the transmission impact
18 study were, in fact, the facilities that had to be
19 upgraded, do you think it would be reasonable to
20 assume that 82 percent of those transmission upgrade
21 costs would be allocated to the companies' customers?

22 MR. LANG: Objection. Go ahead.

23 A. I don't know.

24 Q. And you haven't analyzed --

1 A. I haven't analyzed.

2 Q. Have you discussed the zonal allocation
3 of transmission upgrade costs with Eileen Mikkelsen?

4 A. Yes.

5 Q. And did you discuss with her the
6 reasonableness of assuming that 82 percent of the
7 upgrade costs associated with the retirement of
8 Sammis and Davis-Besse would be allocated to the
9 companies' customers?

10 A. Can you rephrase that again.

11 Q. Yeah. That's kind of a mouthful. Sorry.
12 Are you aware of whether Ms. Mikkelsen assumed that
13 82 percent of the costs associated with Sammis and
14 Davis-Besse were going to be allocated to the
15 companies' customers?

16 THE WITNESS: Repeat that back.

17 (Record read.)

18 MR. LANG: Just to the extent -- I don't
19 think you are into this area, but to the extent there
20 were discussions with counsel, there would be an
21 objection to the extent of legal advice, but
22 discussions on substance between you and Eileen would
23 not be privileged, so you can answer that.

24 THE WITNESS: Repeat that one more time.

1 (Record read.)

2 A. I'm not sure what you mean by "assumed."
3 I mean, what do you mean she assumed?

4 Q. Have you reviewed Ms. Mikkelsen's second
5 supplemental testimony?

6 A. Yes.

7 Q. Okay. And did you review the attachments
8 to that testimony?

9 A. No.

10 Q. Okay. Are you aware of whether
11 Ms. Mikkelsen performed a calculation regarding the
12 allocation of costs associated with transmission
13 upgrades that would be required if Sammis and
14 Davis-Besse retired?

15 A. Yes.

16 Q. And did that calculation assume that
17 82 percent of the -- of those costs would be
18 allocated to the companies' customers?

19 A. Yes. I believe she used that in her
20 testimony, yes.

21 Q. Okay. And did you provide the opinion to
22 Ms. Mikkelsen that 82 percent was a reasonable
23 assumption?

24 A. Can you rephrase that.

1 Q. Sure. Did you share with Ms. Mikkelsen
2 any thoughts about the reasonableness of assuming
3 that 82 percent of those transmission upgrade costs
4 would be allocated to the companies' customers?

5 A. Yes.

6 Q. And what opinions did you share?

7 A. I shared with her without doing a cost
8 analysis on exactly what the cost allocation would be
9 since we don't know what facilities, that an estimate
10 I would use would be something that recent history
11 that happened, and the recent history that we had
12 information on was the retirements for the -- what we
13 saw for the Eastlake -- or the plant retirements from
14 the lake.

15 Q. Okay. Thank you. And if Sammis and
16 Davis-Besse were to retire, would the costs be --
17 would the transmission up -- and transmission upgrade
18 costs had to be incurred, would those costs be
19 allocated consistent with the description you
20 provided me earlier today regarding DFAX and --

21 THE WITNESS: No. Can you repeat that
22 back.

23 (Record read.)

24 A. Yes.

1 Q. Okay. Thank you. Can we turn to page 5
2 of your supplemental testimony. So starting on line
3 17 and running through page 6, line 10, there is a
4 discussion about the reliability benefits of
5 generators. Is that a fair characterization of that
6 testimony?

7 A. Yes.

8 Q. Okay. And it's your opinion that
9 generators can provide both real and reactive power?

10 A. Yes.

11 Q. And generators could alleviate
12 reliability issues that can occur during both normal
13 conditions and during outages?

14 A. Yes.

15 Q. And generators can provide generation
16 redispatch as an option for addressing reliability
17 problems, correct?

18 A. Yes.

19 Q. Would you agree that new generation
20 facilities such as natural gas plants can also
21 alleviate reliability issues that can occur during
22 both normal conditions and when there are outages?

23 A. Yes.

24 Q. Okay. And would you agree that new

1 generation facilities can provide generation
2 redispatch as an option for addressing reliability
3 issues?

4 MR. LANG: Just to -- objection. Can I
5 have that read back. I'm sorry.

6 (Record read.)

7 MR. LANG: Yeah. Still objection. You
8 can answer if you can.

9 A. Yeah. I guess maybe ask you to rephrase.

10 Q. So generators can provide -- a generating
11 unit can provide generation redispatch as an option,
12 correct?

13 MR. LANG: Objection again.

14 A. Yeah. I'm still.

15 Q. Okay. So looking at your -- your written
16 testimony starting on line 21.

17 A. Uh-huh.

18 Q. It states "For plants like Sammis,
19 generation redispatch is used extensively to manage
20 the transmission constraints that occur on the system
21 in realtime. When generators are removed from the
22 system, a key tool for operators is no longer
23 available for them to utilize. When generation
24 redispatch is not an option to address a reliability

1 problem (as may occur when there are outages on the
2 transmission system), system operators must rely on
3 system reconfiguration, (e.g., a switching solution
4 where lines or transformers are removed from service)
5 or various emergency procedures (including load
6 shed)." That's your testimony, correct?

7 A. Yes.

8 Q. And so generators, one of the benefits of
9 generators is that they permit this generation
10 redispatch function to occur, correct?

11 A. I'm not sure what you mean by "they."

12 Q. The generators. The -- having a
13 generator on the system gives the operators of the
14 system an -- the option of using that to address
15 reliability problems.

16 A. Yes.

17 Q. And that's equally true for new
18 generation facilities, correct?

19 A. Yes.

20 Q. Okay. Are you aware of an 800-megawatt
21 natural gas plant that's been proposed by Clean
22 Energy Future, LLC, to be built in Lordstown, Ohio?

23 A. Yes.

24 Q. Do you know if the generation

1 deliverability analysis for this case assumed that
2 that Lordstown plant would be in service?

3 THE WITNESS: Can you repeat the
4 question. I am not exactly sure what he was asking
5 to know how to answer.

6 Q. You know what? Why don't -- I will
7 restate it.

8 You know when I am referring to the
9 generation reliability, I am referring to the one
10 associated with the transmission impact study for
11 this case. Do you understand that?

12 A. Yes.

13 Q. Okay. Do you know if the generation
14 deliverability analysis assumed that the Lordstown
15 plant would be in service?

16 A. You have to rephrase that.

17 Q. Do you know if the 2019 RTEP base case
18 model included the Lordstown plant?

19 THE WITNESS: Can you repeat that.

20 (Record read.)

21 A. No, it did not include it.

22 Q. Okay. So the generation deliverability
23 analysis did not include it either, correct?

24 A. Correct.

1 Q. Do you know if the RPM 2017-2018 base
2 case model included the Lordstown plant?

3 A. No, it did not include it.

4 Q. So the load deliverability analysis
5 likewise did not include it, correct?

6 A. Correct.

7 Q. Okay. Do you know if Lordstown, Ohio, is
8 closer to the companies' load than the Sammis plant?

9 A. Can you rephrase that.

10 Q. Sure. Do you know -- so the companies'
11 load would be the ATSI zone, correct?

12 A. Yes.

13 Q. Do you know if Lordstown is located in
14 closer proximity to the ATSI zone than the Sammis
15 plant?

16 A. Once again rephrase.

17 Q. That's okay. We can move on. If the
18 Lordstown gas plant were ultimately built and it
19 began operating, would that improve the reliability
20 of the -- of the grid?

21 A. Can you rephrase.

22 Q. Sure. So we've earlier -- a few moments
23 ago we discussed some of the benefits associated with
24 generators, reliability benefits associated with

1 generators. And we also had a bit of a discussion
2 about new generation and the potential reliability
3 benefits of it. I'm curious if the Lordstown gas
4 plant if it were built and it began operating could
5 provide those same reliability benefits.

6 A. Can you specify exactly what reliability
7 benefits you mean.

8 Q. Could the Lordstown gas plant be used for
9 generation and redispatch?

10 A. I don't know.

11 Q. Is there a piece of information you would
12 have to have to be able to know?

13 A. One, if the plant was capable of doing
14 it, which I don't know any details about the plant,
15 so I can't answer for that. So that's -- I don't
16 know if it would be capable or not.

17 Q. Okay. Could you describe for me what
18 generation dispatch is generally speaking.

19 A. Repeat that again.

20 Q. Could you explain to me what generation
21 redispatch --

22 A. Redispatch?

23 Q. Yes.

24 A. A redispatch would be when there is an

1 overload on a facility line, and then PJM tries to
2 take generation and one -- one or more generators up
3 and one or more generators down to change the flow on
4 the system to relieve the overload.

5 Q. So the quicker that a unit can ramp up or
6 ramp down the more capable it would be in resolving
7 that type of reliability problem?

8 A. I mean, I don't know. I don't know
9 timewise.

10 MR. SOULES: Okay. Can we take a
11 5-minute break?

12 MR. LANG: How about a lunch break?

13 MR. SOULES: That's fine.

14 MR. LANG: Can you do 45 minutes?

15 MR. FISK: Yes.

16 (Thereupon, at 12:19 a lunch recess was
17 taken.)

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1 Wednesday Afternoon Session,

2 July 1, 2015.

3 - - -

4 RODNEY L. PHILLIPS

5 being by me previously duly sworn, as hereinafter
6 certified, deposes and says further as follows:

7 CROSS-EXAMINATION (Continued)

8 By Mr. Soules:

9 Q. Welcome back, Mr. Phillips. Before the
10 lunch break, we were talking about pages 5 and 6 of
11 your supplemental testimony. And in particular I --
12 in particular on page 5, line 1, through page 6, line
13 10, there is a discussion of the reliability benefits
14 associated with generators; is that correct?

15 A. Yes.

16 Q. We were also talking about the Lordstown
17 gas plant that's been proposed. Do you recall that
18 discussion?

19 A. Yes, yes.

20 Q. Do you have any reason to think that the
21 Lordstown plant, if it were built and began
22 operating, would not provide the benefits discussed
23 on pages 5 and 6 of your testimony?

24 MR. LANG: Objection, calls for

1 speculation. You can answer.

2 A. I'm not sure. I don't know the exact
3 type of unit it is so benefits of redispatching as
4 far as that goes, I do not know for sure if it has
5 that capability.

6 Q. Okay. But you don't have a specific --
7 there is no specific reason that you're aware of
8 currently as to why the Lordstown plant would not
9 provide those benefits?

10 MR. LANG: Objection. Different way, you
11 are asking him to speculate.

12 A. Yeah.

13 MR. LANG: Tell him again.

14 A. Yeah, I don't know what it will be
15 capable of doing because I don't know what type of
16 generator it is or what its characteristics are.

17 Q. Okay. And there is nothing about the
18 geographic location of that proposed plant that would
19 necessarily prevent it from providing the reliability
20 benefits discussed on pages 5 and 6 of your
21 supplemental testimony?

22 A. No.

23 Q. Okay. Are you aware of a 700-megawatt
24 natural gas power plant that's been proposed by a

1 company called Carroll County Energy that would be
2 located in Carroll County, Ohio?

3 A. Yes.

4 Q. Do you know if -- so, again, if I am
5 referring to the generation deliverability analysis
6 or the load deliverability analysis, I am referring
7 to those associated with the transmission impact
8 study.

9 A. Okay.

10 Q. Do you know if the generation
11 deliverability analysis assumed that the Carroll
12 County plant would be in service?

13 A. Could you rephrase that?

14 Q. What part is confusing?

15 A. Well, assumed in service or assumed it
16 was in the study? I am not exactly sure what the
17 question is.

18 Q. Is the Carroll County gas plant in the
19 2019 RTEP base case model?

20 A. No.

21 Q. Is that -- so, therefore, that plant was
22 not part of the generation deliverability analysis,
23 correct?

24 A. Correct.

1 Q. And is that plant in the RPM 2017-2018
2 base case model?

3 A. No.

4 Q. So that plant was not part of the load
5 deliverability analysis, correct?

6 A. No.

7 Q. Okay. Do you have any reason to think
8 that the Carroll County gas plant, if it were built
9 and began operating, could not provide the benefits
10 discussed on pages 5 and 6 of your supplemental
11 testimony?

12 MR. LANG: Objection. It calls for
13 speculation.

14 A. Yeah, I don't know.

15 Q. Okay. And is there anything in
16 particular about the geographic location of that
17 proposed plant that would prevent it from providing
18 these reliability benefits?

19 A. I don't know on that one.

20 Q. Okay. Are you aware of a natural gas
21 plant called the Oregon Clean Energy Center that's
22 proposed to be built in Lucas County, Ohio?

23 A. Yes.

24 Q. Do you know if the Oregon Clean Energy

1 Center was included in the 2019 RTEP base case model?

2 A. Yes.

3 Q. Yes, it was?

4 A. Yes.

5 Q. Okay. So is the Oregon Clean Energy
6 Center part of the generation deliverability
7 analysis?

8 A. Yes, that would be the case.

9 Q. Was the Oregon Clean Energy Center
10 included in the RPM 2017-2018 base case model?

11 A. No.

12 Q. So that proposed plant was not included
13 in the load deliverability analysis, correct?

14 A. Correct.

15 Q. Okay. Do you have any specific reason to
16 think that that plant, if it were built and began
17 operating, would not provide the benefits discussed
18 on pages 5 and 6 of your testimony?

19 MR. LANG: Objection.

20 A. I don't know.

21 Q. Okay. Is there anything in particular
22 about the geographic location of that plant that
23 would prevent it from providing those reliability
24 benefits?

1 A. No.

2 Q. Okay. Could we turn to page -- oh, we
3 are on page 5 of your supplemental testimony.
4 Starting on line 2, it states "My supplemental
5 testimony will address the necessity of Sammis and
6 Davis-Besse, in light of future reliability concerns,
7 as well as the impact that a closure of the Plants
8 would have on electric prices." That's your
9 testimony, correct?

10 A. Yes.

11 Q. Are you offering any opinions in this
12 case about whether Sammis and Davis-Besse are at risk
13 of retirement?

14 A. No.

15 Q. Okay. Would you agree that PJM is
16 responsible for ensuring reliability within the
17 PJM -- PJM footprint?

18 A. Yes.

19 Q. And that footprint extends beyond Ohio,
20 correct?

21 A. Yes.

22 Q. Do you think PJM is capable of ensuring
23 the reliability of the grid within the PJM footprint?

24 A. Yes.

1 Q. Okay. Just to confirm you are not
2 offering any opinions in this case about the
3 reliability impacts of retiring only the Sammis
4 plant, correct?

5 A. Correct.

6 Q. And you are not offering any opinions in
7 this case about the reliability impacts of retiring
8 only the Davis-Besse plant, correct?

9 A. Correct.

10 Q. Okay. Could we pull up Exhibits 1 and 2
11 which were your workpapers and the TEAC report. If
12 we could start on page 7 of Exhibit 2, let me know
13 when you are there.

14 A. Page 7, yes.

15 Q. So down at the very bottom of that page,
16 the very last sentence it states, "In addition to
17 these upgrades to address voltage problems in and
18 around the City of Cleveland, a 150 MVAR SVC and 100
19 MVAR capacitor were recommended at New Castle station
20 in western Pennsylvania to address voltage problems
21 primarily related to the deactivation of the New
22 Castle generation." Do you see where it states that?

23 A. Yes, I do.

24 Q. So this transmission upgrade project was

1 not related to the retirement of the 2,400 coal plant
2 retirements that are discussed in your testimony,
3 correct?

4 A. I don't know.

5 Q. Okay. Why don't you know?

6 A. Well, this says -- this case -- it didn't
7 say there is no impact. This just says it is
8 primarily related to New Castle but it does not say
9 there is no impact from the lake plants.

10 Q. Do you think that -- I'm sorry. When you
11 refer to the lake plants, you are referring to the
12 2,400 megawatts?

13 A. The 2,400, yes.

14 Q. Including the GenOn Niles units?

15 A. Including the Niles units, yes.

16 Q. Would you -- is it fair to say that this
17 transmission upgrade is primarily related to
18 something other than the 2,400 -- other than the lake
19 plant retirements?

20 A. That's the way it's worded here in the
21 report, yes.

22 Q. Okay. Could we look at Exhibit 1 and the
23 seventh page of that exhibit. So the second to last
24 entry in the table of the transmission upgrades lists

1 b1983 and the description is a 150 MVAR SVC and 100
2 MVAR cap at New Castle 138 kilovolt. Do you see
3 where it states that?

4 A. Yes.

5 Q. Is that the same transmission upgrade
6 project described in the TEAC report?

7 A. It appears to be.

8 Q. Okay. Do you have any reason to believe
9 that this project is related to the retirement of the
10 lake plants?

11 THE WITNESS: Could you repeat what he
12 said?

13 (Record read.)

14 A. There might be some based on the way it's
15 worded in the report.

16 Q. Because of the -- you are referring to
17 the primarily language?

18 A. Yes, yes.

19 Q. Okay. So that -- is it fair to say that
20 that primarily language indicates that there could be
21 other reasons other than the key activation of New
22 Castle for that transmission upgrade project?

23 A. That's the way I would take that, yes.

24 Q. Okay. But the report itself doesn't

1 specifically tie the language plant retirements to
2 this transmission upgrade project, correct?

3 A. Not in that sentence, no.

4 Q. Are you aware of any -- anything else in
5 the TEAC report that would tie that project to the
6 retirement of the lake plants?

7 A. I don't remember. I would have to read
8 the report again, but I don't remember off the top of
9 my head, no.

10 Q. Did you take any steps to determine
11 whether the retirement of the lake plants is related
12 to this transmission upgrade project?

13 A. Can you rephrase that again.

14 Q. Did you -- did you do anything to
15 ascertain when the retirement of the lake plant --
16 whether the retirement of the lake plants is related
17 to this transmission upgrade project?

18 A. I discussed them all with Gavin. We
19 talked down through them. I don't remember -- I
20 don't remember specifically on that project.

21 Q. Okay. Turning back to Exhibit 2, again
22 on page 8, in the second full paragraph there is a
23 reference to a new 345-kilovolt line from Allen
24 Junction to Midway to Lemoyne that was recommended to

1 address a NERC category C3 (N-1-1) thermal violation
2 on the Lemoyne to BG Tap 138-kilovolt line. Do you
3 see where it states that?

4 A. Yes. That's the sentence in this
5 paragraph?

6 Q. The second full paragraph so the next
7 paragraph down.

8 A. Oh, this one, sorry.

9 Q. And please take a moment to look at that,
10 if you would like.

11 A. Okay.

12 Q. Okay. And the estimated costs of that
13 project is \$86.3 million; is that correct?

14 A. Yes.

15 Q. Okay. And if we could turn back to your
16 workpapers, Exhibit 1, to the sixth page. Looking
17 down this list, the fifth from the bottom, there is a
18 transmission upgrade project labeled b1936.

19 A. Yes.

20 Q. Is that the same transmission project
21 referenced in the TEAC report?

22 A. Yes.

23 Q. Okay. The TEAC report -- in that same
24 paragraph the sentence after the one I had just read

1 states "The violation is being driven by the loss of
2 the Allen Junction to Lulu 345-kilovolt tie line to
3 Michigan and the Lemoyne to Five Points 345-kilovolt
4 line." Do you see where it states that?

5 A. Yes.

6 Q. Okay. So the TEAC report does not
7 identify the lake plant retirements as being the
8 motivation for this transmission upgrade project,
9 correct?

10 A. No.

11 Q. Why -- where does it refer to the lake
12 plant retirements?

13 A. That's -- it's in the part there where
14 they are discussing the -- all of these projects they
15 are discussing they are due to the retirements. What
16 it's referring to here is the contingency that's
17 driving the upgrade being needed.

18 Q. And the retirements that you are
19 referring to are the ones discussed on page 6 of the
20 TEAC report?

21 A. I would have -- I mean, this whole report
22 deals with those retirements. I would have to read
23 the report to see if it was referring specifically to
24 that. But this whole report is talking about

1 upgrades due to generation retirements.

2 Q. Including many retirements other than the
3 lake plants, correct?

4 A. Yeah. There is other places where they
5 reference other retirements, yes, and upgrading
6 needed.

7 Q. Okay. So going back to the second full
8 paragraph on page 8, that discussion does not
9 attribute that transmission upgrade project
10 specifically to the lake plants, correct?

11 A. This paragraph does not mention that. It
12 just mentions the contingency that was driving the
13 upgrade.

14 Q. Okay. Do you have any reason to believe
15 that this transmission upgrade project is related to
16 the lake plant retirements?

17 A. Yeah, I believe that was discussed with
18 Gavin when we reviewed them that this was a project
19 that was identified for that.

20 Q. Okay. Other than the discussions with
21 Mr. Cunningham, did you do anything to identify
22 whether this transmission upgrade project was related
23 to the retirement of the lake plants?

24 A. I had discussions with some of our

1 planning people. I don't remember if it was on this
2 particular one or not, but I also talked to our
3 planning people.

4 Q. Who -- and who are the planning people?

5 A. That would have been our planning
6 department John Signer, Jeff Machour.

7 Q. Okay. But there was no document that you
8 relied on in developing the list of transmission
9 upgrades other than the TEAC report, correct?

10 A. Correct.

11 Q. Okay. Could we look in the prior
12 paragraph again on page 8. This paragraph begins
13 "There are also a number of projects that are
14 required to address thermal violations." And then it
15 says "A new Harmon 345/138/69 kilovolt station was
16 recommended to address several NERC categories C
17 (breaker failure) contingency overloads." Do you see
18 where it states that?

19 A. Yes.

20 Q. Okay. And the estimated cost of that
21 transmission upgrade project is \$46 million, correct?

22 A. Yes.

23 Q. And if we can go back to your workpapers,
24 the sixth page again, the project listed as b1925.

1 A. Yes.

2 Q. That's the same project that's referenced
3 in this portion of the TEAC report, correct?

4 A. Yes.

5 Q. Okay. And, again, the TEAC report does
6 not specifically tie this transmission upgrade
7 project to the lake plant retirements, correct?

8 A. At least not in this paragraph, no.

9 Q. Did you do anything to determine whether
10 this transmission upgrade project was related to the
11 lake plant retirements?

12 A. Same, same as with the others.

13 Q. You spoke to Mr. Cunningham.

14 A. Cunningham and the planning department,
15 yes.

16 Q. Okay. Immediately beneath that
17 discussion in the same paragraph there was a
18 reference to a new Toronto 345/138 kilovolt
19 substation. Do you see that discussion?

20 A. Yes.

21 Q. And the estimated costs for that station
22 is \$41.8 million; is that correct?

23 A. Yes.

24 Q. And if we look at the seventh page of

1 your workpapers, is the project listed as b1977 the
2 same project?

3 A. Which lines were you referring to again
4 on page 8? Which lines were you referring to again?

5 Q. So the first full paragraph, fourth
6 sentence -- no, fifth sentence "In addition, a new
7 Toronto 345."

8 A. Okay.

9 Q. Yep.

10 A. Yes.

11 Q. Those are the same transmission upgrade
12 projects.

13 A. Yes.

14 Q. Okay. And the TEAC report does not
15 specifically tie this project to the retirement of
16 the lake plants, correct?

17 A. No, it does not in that paragraph, no.

18 Q. Okay. And is the only thing that you did
19 to determine whether this project was related to the
20 lake plant retirements is speak with Mr. Cunningham
21 and the planning department?

22 A. Yes.

23 Q. Okay. And then in the same paragraph a
24 couple of sentences down, there is a reference to a

1 new Toronto to Harmon 345-kilovolt line. Do you see
2 that?

3 A. Yes, uh-huh.

4 Q. And the estimated cost of that project is
5 218.3 million, correct?

6 A. Yes.

7 Q. If we could turn back to Exhibit 1, the
8 project listed as b1977.1, is that the same project?

9 A. Yes.

10 Q. And the TEAC report does not specifically
11 tie this transmission upgrade project to the lake
12 plant retirements, correct?

13 A. Correct. That paragraph does not say.

14 Q. Okay. And why -- why did you include
15 that transmission upgrade project in the list of the
16 38 projects?

17 A. That was based on my discussions with
18 Gavin and the planning department.

19 Q. Okay. Did you speak with Mr. Cunningham
20 or the planning department about that particular
21 project?

22 A. I don't -- I don't remember exactly what
23 every project, no. I don't remember.

24 Q. Okay. Did you walk through each of the

1 38 projects separately in those discussions?

2 A. I believe we discussed them all, but I
3 don't -- I can't remember for sure.

4 MR. SOULES: Okay. We are done for the
5 public session.

6 MR. LANG: Okay.

7 MR. SOULES: Thank you.

8 MR. LANG: First name I heard this
9 morning on the phone was Gretchen Petrucci. Are you
10 there?

11 MS. PETRUCCI: Good afternoon. Yes, I
12 am.

13 MR. LANG: Do you have questions for the
14 public session?

15 MS. PETRUCCI: Just one second, please.

16 - - -

17 CROSS-EXAMINATION

18 By Ms. Petrucci:

19 Q. Mr. Phillips, if you could turn to
20 Attachment GLC-1 which is attached to the direct
21 testimony.

22 A. Okay.

23 Q. Does this calculation assume that both
24 the Davis-Besse plant and the Sammis plant will close

1 at the same time?

2 A. Yes.

3 Q. And based on what you stated earlier,
4 that same time is sometime before June of 2017,
5 correct?

6 A. Yes.

7 Q. And that is also assuming the entirety of
8 Sammis closing, correct?

9 A. Yes.

10 Q. If we can turn to page 2 in the direct
11 testimony, line 19.

12 A. Okay.

13 Q. At this line you begin referring to the
14 need for the transmission upgrades. How do you --
15 how do you define the word "need" in this context?

16 A. Are you referring to the first sentence
17 there? Is that line 19 you are referring to?

18 Q. Yes. In line 19 you refer there first --
19 I believe it's the first reference.

20 A. Okay.

21 Q. The "need transmission upgrade" and how
22 are you referring to the term "need" in this context?

23 A. Need is referring to are there any
24 reliability issues that need to be addressed when the

1 generation plant ceases operations.

2 Q. And by needing to be addressed, is that
3 also meaning requires an upgrade to the transmission
4 system?

5 A. Can you repeat that again.

6 MS. PETRUCCI: Can we have it reread,
7 please.

8 (Record read.)

9 A. Yes.

10 Q. Is it correct then you are not stating
11 that the need for a transmission upgrade is any
12 particular type of upgrade, correct?

13 A. Can you rephrase.

14 Q. When you are referring to the need for
15 transmission upgrade, you are not stating that the
16 reliability concern that requires an upgrade is
17 requiring a particular kind of upgrade.

18 THE WITNESS: Can you repeat that
19 question.

20 (Record read.)

21 A. Can you rephrase. I am still confused.

22 Q. The need for transmission upgrades is not
23 necessarily meaning in your testimony here that one
24 type of upgrade versus another is required; is that

1 correct?

2 A. I'm not sure what you mean by "one versus
3 another."

4 Q. Well, let's take a look at G -- your --
5 the Attachment GLC-1.

6 A. Okay.

7 Q. In the public segment of that table there
8 are different kinds of upgrades listed; am I right?

9 A. Yes.

10 Q. And those were determined based on a
11 study as to whether or not reliability concerns
12 required some sort of upgrade, correct?

13 A. Those were based on a study that I
14 identified reliability concerns, reliability issues.

15 Q. And then the specific type of upgrade was
16 decided after that, correct?

17 A. Yes, after the study was run, yes.

18 Q. And in your supplemental testimony you
19 presented alternative types of upgrades for the
20 facilities that were identified as being overloaded
21 if both Davis-Besse and Sammis retired at the same
22 time, correct?

23 A. Can you rephrase that.

24 Q. The 1 billion -- \$1.1 billion estimate

1 that you provide in the supplemental testimony is
2 based on a different type of upgrade taking place for
3 a number of the overloaded facilities that are
4 identified in Attachment GLC-1, correct?

5 A. Yes.

6 Q. There has been no determination as to
7 which of these upgrades would have to be implemented
8 if Davis-Besse and Sammis both retired at the same
9 time, correct?

10 A. No.

11 Q. No, that's not correct, or can you
12 clarify, please?

13 A. No, there's no final determination.

14 Q. Okay. Thank you. Now, if we turn to the
15 2,400 megawatt discussion that you had -- I'm sorry.
16 Let me get this number correct here. One moment,
17 please.

18 Okay. With respect to the 2,400
19 megawatts of power that has already been announced
20 for retirement, the 38 separate transmission grade
21 upgrades -- transmission system upgrades that you
22 mentioned in your testimony are -- were based on
23 those very specific retirements, plant retirements;
24 is that correct?

1 A. They were based on those plant
2 retirements, yes.

3 Q. So is it fair to say that the 38
4 transmission system upgrades were individualized to
5 the specific retirements involved in 2012 through
6 2015?

7 MR. LANG: Objection.

8 A. Yeah. Can you rephrase.

9 Q. Those 38 transmission system upgrades are
10 linked specifically to the 2,400 megawatts that have
11 been and are being retired between 2012 and 2015.

12 A. Yes.

13 Q. You're not referring to those upgrades as
14 indicative of the transmission upgrades needed if
15 Davis-Besse and Sammis were to both retire at the
16 same time, correct?

17 MR. LANG: Objection.

18 A. Yeah. Can you -- yeah. Can you
19 rephrase. I am not sure I understand the question.

20 Q. Those 38 transmission system upgrades are
21 not linked to a retirement of Sammis and Davis-Besse,
22 are they?

23 A. No, they are not linked.

24 Q. And is it fair to say that you have

1 presented them in your testimony, the 38 separate
2 transmission system upgrades, to reflect that based
3 on specific retirement -- those specific retirements,
4 that system upgrades have been determined to be
5 needed?

6 THE WITNESS: Can you repeat that
7 question again.

8 MS. PETRUCCI: Can we have it read back,
9 please.

10 (Record read.)

11 A. I'm confused in the sense what -- which
12 upgrades you are referring the 38 projects to.

13 Q. Let's turn to page 3 of the direct
14 testimony.

15 A. Okay.

16 Q. Line 13.

17 A. Yes.

18 Q. Right there you indicate that there are
19 38 separate transmission systems -- system upgrades
20 required to maintain reliability following the 2,400
21 megawatts of plant retirement, correct?

22 A. Yes, that's correct.

23 Q. Is it fair to say that you were not
24 pointing to those system upgrades to support or

1 substantiate the amounts estimated for upgrades after
2 a closure of Sammis and Davis-Besse at the same time?

3 A. Yes. Those were not used to estimate
4 costs for Davis-Besse and Sammis retiring.

5 Q. You indicated also that the allocation of
6 costs is based on the PJM open access transmission
7 tariff, correct? And I will point you to page 10 of
8 the supplemental testimony, if you need it.

9 A. Yes, that's what PJM uses to develop cost
10 allocation, yes, that's correct.

11 Q. You have not presented or proposed a
12 particular allocation of costs for transmission
13 upgrades in the event that there was a closure of
14 Sammis and Davis-Besse at the same time, correct?

15 A. That is correct.

16 Q. And in referring to how prior
17 transmission upgrade costs were allocated, you've
18 indicated that those costs were paid by customers
19 outside of the FirstEnergy service territory,
20 correct?

21 THE WITNESS: Can you repeat that again.

22 MS. PETRUCCI: Can we have it read.

23 (Record read.)

24 A. No, if I understand the question

1 correctly.

2 Q. Does that mean that no customers outside
3 the FirstEnergy Service territory have paid costs
4 associated with the prior transmission upgrades that
5 you've identified in your testimony?

6 A. No.

7 Q. Therefore, some of the costs have been
8 paid by customers outside of the FirstEnergy
9 territory?

10 A. Yes.

11 Q. For purposes of analyzing the anticipated
12 transmission upgrade, was it assumed that no other
13 plants would be coming online in Ohio before
14 Davis-Besse and Sammis were retired at the same time?

15 A. No.

16 Q. Was it assumed no other plants would be
17 coming online in the PJM region before Davis-Besse
18 and Sammis were retired at the same time?

19 A. No.

20 Q. What plants were -- new plants were
21 included in the study?

22 A. Plants that would have been included
23 would be the ones that the PJM models included based
24 on PJM's guidelines on when they included generators

1 which relates to whether they signed an agreement,
2 facilities or interconnection agreement, and when the
3 in-service date of the generator is.

4 Q. Can you tell me the plants?

5 A. I don't -- I don't remember all those
6 plants.

7 Q. Do you remember any of them that are in
8 Ohio?

9 A. I recall the Oregon Clean Center was in
10 the 2019 model.

11 Q. Is that the only one?

12 A. That's the only one I remember.

13 Q. And that particular plant is located --
14 or will be located in north -- Northern Ohio near the
15 Davis-Besse plant; isn't that correct?

16 A. Yes, it's in that region, yes.

17 Q. Do you know if -- well, I'll ask,
18 although I think I know the answer, if the Tenaska
19 Rolling Hills plant was included?

20 A. I don't -- I don't know.

21 Q. Okay. And would your answer be the same
22 for the NTE Ohio facility that's near -- planned for
23 near Middletown, Ohio?

24 A. Yeah, I don't know.

1 Q. Okay. Let's turn to page 5 of the
2 supplemental testimony where you refer to generation
3 redispatch on line 21.

4 A. Okay.

5 Q. Are you there?

6 A. Yes.

7 Q. You indicate in the beginning of the
8 sentence on line 21 "For plants like Sammis,
9 generation redispatch is used extensively." What do
10 you mean by "for plants like Sammis"?

11 A. Just where Sammis is a coal plant, those
12 coal plants can be redispatched versus if you had a
13 wind plant or solar plant, those are usually not used
14 to redispatch.

15 Q. You did indicate earlier that a natural
16 gas plant can be redispatched, correct?

17 A. In general, yes. Specifically by unit
18 based on characteristics for that but in general gas
19 plants can.

20 Q. Okay. Let's turn to page 6 again in the
21 supplemental testimony, lines 6 to 7, you talk about
22 the increasing distance between generation and a load
23 center.

24 A. Yes.

1 Q. Do you -- is there an amount in the
2 increase in distance that increases the potential for
3 outages?

4 A. Just the longer it's away in miles
5 increases the exposure so it just increases as the
6 exposure length goes up.

7 Q. So you are speaking just in general and
8 not with respect to any particular facility.

9 A. Yeah, that's correct.

10 Q. And then jumping down, lines 8 to 10, you
11 indicate that "Ideally, the system generation
12 resources are located in close electrical proximity
13 to the load centers." Is there an ideal electrical
14 proximity?

15 A. Just the closer they are the better from
16 being able to not be exposed to interruptions and
17 being able to provide reactive support.

18 Q. If you can turn to page 7 in the
19 supplemental testimony, lines 4 to 6, please.

20 A. Okay.

21 Q. In referencing a "significant reliability
22 and economic risk for Ohio," is there anything in the
23 FirstEnergy electric security plan proposal
24 specifically and directly attempting to address the

1 reliability risk that you referred to here on page 7?

2 MR. LANG: Objection to the extent that
3 it's calling for testimony beyond the scope of what
4 he is providing here.

5 A. Yeah. I don't know.

6 Q. I am just finding a few of my questions
7 have been answered. Just a moment, please.

8 Nothing in either the direct testimony or
9 the supplemental testimony that you are sponsoring
10 indicates that Davis-Besse will retire, correct?

11 A. No.

12 Q. No, that's not correct or, no, there is
13 nothing in your testimony that indicates Davis-Besse
14 will retire?

15 A. No, nothing in the testimony.

16 Q. Okay. And then I will ask the same
17 question with respect to Sammis, there isn't anything
18 in your direct or supplemental testimony that states
19 that Sammis will retire, correct?

20 A. Yes.

21 Q. And that's if Davis-Besse and Sammis do
22 not retire, the transmission upgrades that are
23 contained and listed in Attachment GLC-1 will not be
24 needed specifically to address those plants

1 retirements, correct?

2 A. Yes.

3 MS. PETRUCCI: Okay. Just one moment. I
4 would like to go back over my notes.

5 Okay. Thank you very much. I have no
6 further questions.

7 MR. LANG: All right. Next on my list is
8 Madeline Fleisher.

9 MS. FLEISHER: Hi.

10 - - -

11 CROSS-EXAMINATION

12 By Ms. Fleisher:

13 Q. Mr. Phillips, my name is Madeline
14 Fleisher. I represent the Environmental Law & Policy
15 Center. Thanks for being in Akron today.

16 So I would like to go back to something
17 you briefly talked about with Mr. Soules which is you
18 mentioned that load forecasts are one of the inputs
19 into the RTEP planning process; is that correct?

20 A. Yes.

21 Q. So is it true that changes in future
22 energy efficiency measures could change the RTEP base
23 case?

24 THE WITNESS: Could you repeat that?

1 Q. Sure. Is there anything in particular
2 that was unclear?

3 A. No. I was just trying to listen to it
4 again to make sure I understood what you said.

5 Q. Sure. I am happy to repeat. I just
6 didn't know if I needed to edit as well. So my
7 question was whether it's true that changes in future
8 energy efficiency measures that would affect load
9 could change the RTEP base case.

10 A. I guess rephrase. I am not sure when
11 changes -- what you mean it would impact the case.

12 Q. I guess I am asking could having more or
13 less energy efficiency occurring in the future, could
14 that affect how much transmission is required in the
15 future?

16 A. It impacts what's input into the model.

17 Q. Okay. And does that affect the output
18 from the model?

19 A. I don't know.

20 Q. I guess I can boil it down a little. I
21 don't mean to interrupt but is -- are -- is the need
22 for future transmission at least to some extent
23 dependent on what your future load is?

24 A. Load is an input into -- into the model.

1 Q. Okay. Does that mean that the output
2 depends on that input in part?

3 A. The results would be -- that would be one
4 of the items that would be going into the results,
5 that input.

6 Q. Okay. And do you know how the RTEP
7 process incorporates energy efficiency programs
8 planned in Ohio for 2019?

9 THE WITNESS: Could you repeat that
10 again?

11 Q. I guess I'll take a step back. Do you
12 know how the RTEP, the creation of the RTEP base
13 case, incorporates future energy efficiency?

14 A. No.

15 Q. Okay. So I think I probably know the
16 answer, but do you know if the RTEP's base case for
17 2019 incorporates energy efficiency measures or
18 programs that might be occurring in Ohio in 2019?

19 A. I don't know.

20 Q. Okay. Are you familiar with the MAP and
21 PAF transmission projects that were proposed by PJM?

22 A. Could you repeat that again?

23 Q. Are you familiar with the MAP and PAF
24 projects -- transmission projects that were proposed

1 by PJM several years ago?

2 A. Very little.

3 Q. Okay. All right. Moving on I was just
4 wondering why did -- to the extent you know, why was
5 the closure date of 2000 -- of June 1, 2017, chosen
6 for the -- for the load deliverability analysis?

7 A. That date was chosen when you run the
8 2017 -- when we run that load deliverability study,
9 the generation if it's not included in that study
10 would need to be retired by June 1.

11 Q. Okay. I guess I'm not sure I got that.
12 So what -- what's special about the retirement date
13 of 2000 -- in 2017? Is that a projected retirement
14 date for the plant?

15 A. That date when you run the load flow
16 study using the 2017-2018 year, if we are modeling
17 the generation out at Sammis for Davis-Besse, it
18 would need to be out of service by June 1, 2017.

19 Q. Okay, okay. And moving backwards from
20 that, I guess, why was the 2017-2018 year chosen?

21 A. Because that was the latest model
22 available for PJM for running their load availability
23 study.

24 Q. Okay. And does the same apply for the

1 choice of the 2019 RTEP base case?

2 A. That was the latest case available for
3 the 2019 RTEP case, yes.

4 Q. Okay. Again, we may be talking past each
5 other a little bit. So I understand, you chose the
6 most -- the latest available version of the 2019 RTEP
7 forecast, correct?

8 A. Latest version, yes, of the RTEP model
9 they put together, yes.

10 Q. Okay. Why didn't you choose a -- an RTEP
11 base case from a different year like a 2018 RTEP base
12 case?

13 A. We were using the models that PJM put
14 together that would have the latest updated
15 information that they supply.

16 Q. Okay. All right. Can we turn to page 7
17 of your workpaper. It talks about upgrade costs.

18 A. Okay.

19 Q. And in there it says "Excludes Penn Power
20 and Ohio Munis & RECs." Can you explain what "Ohio
21 Munis & RECs" refers to?

22 A. That refers to municipalities, Buckeye
23 Power, other retail customers of a -- retail
24 customers of the companies.

1 Q. Okay. And do you have any knowledge
2 about the number of municipal or customers or other
3 retail customers in the vicinity of Sammis or
4 Davis-Besse?

5 A. No.

6 Q. Okay. Just a second. Okay. And then
7 you also discussed with Mr. Soules the DFAX analysis
8 that's part of determining the allocation of
9 transmission costs. Is that analysis of -- affected
10 by the plant location?

11 A. No.

12 Q. Can you explain?

13 A. The analysis is based on the upgrades, so
14 it's whatever upgrades are being made is what impacts
15 the allocation.

16 Q. Okay. So that -- make sure I understand
17 correctly, so the upgrades that are being made go
18 into the amount that's being allocated; is that
19 correct?

20 THE WITNESS: Can you repeat that again
21 for me.

22 Q. I guess, you know, we can just strike
23 that.

24 Okay. I guess can you -- I know, sorry,

1 you talked about this a little bit before. Can you
2 just briefly reexplain the DFAX methodology?

3 A. Okay. In a DFAX methodology PJM runs
4 analysis to basically determine for the upgrades that
5 are occurring, they will determine by their analysis
6 what load zones are utilizing that facility.

7 Q. Okay. And does the plant's location
8 affect which load zones are likely to be utilizing
9 the facility?

10 A. No.

11 Q. Okay. Does the location of the
12 transmission affect who is likely to be utilizing the
13 facility?

14 A. Well, the overall transmission system
15 impacts that.

16 Q. Okay. So if -- I guess if you had a
17 plant in Cincinnati, would the DFAX analysis
18 transmission upgrade for that plant be different from
19 the DFAX analysis for a plant located in Cleveland?

20 A. It's based on the upgrades. It's not
21 based on the plant.

22 Q. Okay. So if the issue is whether the
23 upgrades are in different places?

24 A. Well, the allocation is on the facilities

1 that are upgraded.

2 Q. Okay. When you say "the allocation is on
3 the facilities," what does that mean?

4 A. It's the facility that's being upgraded
5 that PJM determines how much the costs for that
6 upgrade are going to be allocated to the different
7 zones.

8 Q. Okay. And which zones are they looking
9 at?

10 A. They are looking at all zones across PJM
11 to determine what facility -- for that upgrade of
12 facility what zones would be using that upgrade.

13 Q. Okay. And are zones closer to the
14 facility more likely to be utilizing that upgrade?

15 A. Can't answer that for sure with the way
16 the transmission systems network together.

17 Q. Okay. Do you have any sense of whether
18 that DFAX analysis would be different for plants
19 located near the border of Ohio in terms of
20 allocating transmission costs to other states?

21 A. It's -- it's the -- it's all based on the
22 individual facility that's being upgraded. It
23 doesn't tie back to the generator that was retired.

24 Q. Okay. So somewhere PJM is dealing with a

1 plant retirement and doing an end analysis to
2 determine what transmission upgrades are necessary,
3 how would they decide between something like
4 reconductoring and rebuilding?

5 A. They would work in conjunction with the
6 company where the facilities are located to determine
7 what type of solutions would work best, and then it
8 takes engineering analysis to determine what type of
9 work needs to occur for the facilities involved.

10 Q. Okay. And when you said what solution
11 would work best, could you just offer a little more
12 detail as to how you would determine what would work
13 best?

14 A. As we kind of indicated, it could be to
15 reductor the line or does the line require you to
16 rebuild it because when you do your engineering
17 analysis, other work has to be done, or maybe it's a
18 combination of new lines or new substations would
19 provide you a better overall solution.

20 Q. Okay. And is the better overall
21 solution, is that based solely on the reliability
22 outcomes or is there any consideration of costs?

23 A. PJM would look at what solutions provided
24 the best reliability outcome, and if you had two that

1 provided the same reliability improvements, overall
2 improvements to the system, they normally would go
3 with the one that was lower cost unless there was
4 some other greater benefit with the other from a
5 reliability standpoint, but reliability is the No. 1.
6 The solutions have to provide the reliability
7 improvement that is needed.

8 Q. Okay. You had discussed earlier today
9 that the per-unit cost estimates that you relied on
10 were from an EIPC document.

11 A. Yes.

12 Q. Do you know how those cost estimates were
13 developed?

14 A. The one for PJM, PJM provided those
15 estimates based on average costs that they see in
16 their footprint.

17 Q. Okay. And the -- those per-unit cost
18 estimates, based on your own experience with
19 buildings or with being involved in transmission
20 projects, do those accord with your -- do the EIPC
21 cost estimates accord with your experience?

22 A. Yes, those are in our estimate for
23 ranges, yes.

24 Q. Okay. All right. Can we turn to the

1 TEAC report. I forget now which exhibit number that
2 is.

3 MR. LANG: Exhibit 2.

4 Q. Looking at page 6. Exhibit 2, page 6.

5 A. Okay.

6 Q. Do you see the -- under the title that
7 says "Western Region System Upgrades," it says
8 "Deactivation of the generation along Lake Erie will
9 require significant transmission upgrades to resolve
10 thermal and voltage violations in and around the City
11 of Cleveland which has historically been constrained
12 due to voltage limitations."

13 A. Yes.

14 Q. Do you know whether the transmission
15 facilities around either Sammis or Davis-Besse have
16 historically be constrained due to voltage
17 limitations?

18 A. I don't know.

19 Q. All right. Okay. Sorry I am skipping
20 around here, trying not to repeat things. Going back
21 to your testimony on page 7, so at line 4, there is a
22 statement which you discussed briefly with
23 Ms. Petrucci saying "There is significant reliability
24 and economic risk for Ohio in entrusting system

1 reliability to out-of-state generators sending power
2 on not-yet-built transmission lines." What's the
3 reliability risk you are referring to there?

4 A. The reliability risk is the exposure on
5 the longer distance away, exposure to more potential
6 for line outages, and the risk of the reactive
7 support from the generators not being as -- in the
8 near area of the load.

9 Q. And does PJM account for those risks in
10 its planning processes?

11 A. They -- through their studies they will
12 try to address all of our reliability issues.

13 Q. All right. And what's the economic risk
14 you are referring to in that statement?

15 A. That would be Ohio's plants when they
16 retire loss of jobs, taxes, that type of thing.

17 Q. And what are you basing that statement
18 on?

19 A. Which statement are you referring to?

20 Q. Sorry, that was not very specific. What
21 are you basing your opinions regarding the potential
22 economic risk of entrusting system reliability to
23 out-of-state generators?

24 A. That if generating plants closed, you

1 would have a loss of jobs which has an impact from
2 both loss of jobs, tax base, that type of thing on
3 things that support the plants, those activities gone
4 away.

5 Q. Okay. And in formulating that opinion,
6 did you consider whether the closure of noneconomic
7 plants could result in lower electricity prices in
8 Ohio?

9 MR. LANG: Objection, assumes facts.
10 Answer if you can.

11 A. I was just addressing loss of jobs and
12 taxes.

13 Q. Okay. Give me one minute here.

14 Okay. If we can go back to your
15 testimony at page 7, starting at line 7, there is a
16 question and answer, which I'm not going to go
17 through reading, but if you can just look at that for
18 a second. You refer to natural gas generation
19 lacking important quality of -- qualities of nuclear
20 and coal for -- to deal with extreme weather events
21 and other interruptions of fuel supply. I am
22 paraphrasing there. Are you familiar with the
23 recently approved PJM capacity performance rules?

24 A. No.

1 Q. Do you know whether those would address
2 potential reliability -- potential reliability issues
3 stemming from interruptions in fuel supply?

4 A. I don't know.

5 Q. Okay. I think last question, did you
6 review Mr. Cunningham's testimony before it was
7 initially filed in this case?

8 A. No.

9 Q. Were you -- without getting into the
10 details of any attorney-client communications were
11 you involved in this case prior to its filing in
12 August of last year?

13 A. No.

14 MS. FLEISHER: Okay. I think that's all
15 I have.

16 MR. LANG: Okay.

17 THE WITNESS: Can we take a break?

18 MR. LANG: Yeah. We are going to take a
19 5-minute bio break, and we have got I think a few
20 more lawyers to go on the public section. We will
21 have to keep moving because I think effectively we
22 have just about two-and-a-half hours left of
23 deposition time. So we will take a 5-minute break,
24 and we'll come back.

1 (Recess taken.)

2 - - -

3 CROSS-EXAMINATION

4 By Mr. Olikar:

5 Q. Good afternoon, Mr. Phillips. My name is
6 Joe Olikar, and I represent IGS Energy. Just a few
7 questions today. I will try not to repeat anything,
8 but I apologize if it's necessary to lay some
9 foundation. To start I want to go back to something
10 you talked about with Ms. Fleisher about the PJM load
11 forecast. Do you remember that discussion?

12 A. Yes.

13 Q. Now, am I correct that for purposes of
14 running your model you used information that was
15 provided by PJM regarding load forecasts?

16 A. Yes.

17 Q. And what was the date of the PJM load
18 forecast you used?

19 A. I believe that would have been the
20 beginning of 2014.

21 Q. Okay. And when we are talking about PJM
22 load reports, are we talking about peak load?

23 A. Yes.

24 Q. And if you were to rerun your model with

1 3 percent less peak load throughout the PJM system
2 spread evenly, what impact would that have on your
3 analysis, if you know?

4 MR. LANG: Objection, calls for
5 speculation.

6 A. I don't know.

7 Q. Would you agree that directionally
8 speaking there would be potentially less transmission
9 upgrades needed?

10 MR. LANG: Objection.

11 A. No.

12 Q. And why is that?

13 A. I don't know until I run the results and
14 understand what the flows are in all the various
15 lines.

16 Q. Would you agree that it's possible that
17 if you reduced the peak load in the ATSI footprint,
18 that less transmission upgrades would be necessary if
19 Sammis and Davis-Besse were retired?

20 MR. LANG: Objection, calls for
21 speculation.

22 A. Yeah. I don't know.

23 Q. What is the date of the most recent PJM
24 forecast you've reviewed?

1 A. I think the one came up beginning of
2 2015.

3 Q. And would you agree that in that load
4 forecast PJM identified that it has historically
5 overprojected the amount of load in PJM and,
6 therefore, it reduced its forecast by 2-1/2 to
7 3 percent?

8 A. There is a couple of things in that.
9 Could you rephrase that?

10 Q. Okay. First, would you agree that in --
11 you are referring to the January, 2015, PJM load
12 forecast, correct?

13 A. Yes.

14 Q. And in that January, 2015, load forecast,
15 would you agree that compared to the 2014 load
16 report, PJM indicated that the load will likely be
17 2-1/2 to 3 percent less in future years?

18 A. Yes.

19 Q. Thank you. And for purposes of your
20 testimony the transmission cost upgrades you identify
21 are based upon the assumption that Davis-Besse and
22 Sammis close, correct?

23 A. Yes.

24 Q. Is there anything that would stop

1 FirstEnergy from upgrading these same transmission
2 facilities in the absence of closing Davis-Besse and
3 Sammis?

4 A. Can you rephrase that.

5 Q. Is there anything that would stop
6 FirstEnergy from upgrading the transmission
7 facilities you described in your facility even if
8 Davis-Besse and Sammis stay open?

9 A. I don't know. There would have to be a
10 reason.

11 Q. What reasons can a transmission owner
12 propose to upgrade a transmission facility?

13 A. Usually because they have been
14 overloaded, they have been identified as having a
15 reliability overload issue.

16 Q. Does it have to be?

17 A. No, but that's generally how upgrades
18 would occur.

19 Q. What are the other reasons that a
20 transmission owner could propose?

21 A. If a piece of equipment had a failure
22 with it, then they would be replacing it.

23 Q. Would it be possible for FirstEnergy to
24 propose to upgrade its transmission facilities even

1 if Davis-Besse and Sammis stay open?

2 MR. LANG: Objection, calls for
3 speculation. Answer if you can.

4 A. Yeah, I don't know. I'm not sure I
5 understand the specific thing you are asking.

6 Q. Okay. There -- how many transmission
7 lines are connected to Sammis?

8 MR. LANG: Just -- I don't know if that's
9 confidential or not. You tell me.

10 THE WITNESS: Yeah. That's a good
11 question.

12 MR. LANG: Yeah. I'm not sure it is.

13 THE WITNESS: Yeah, I am not sure about
14 that either. That's a good point.

15 Q. Well, that's fine. Let's speak in
16 generalities then. Would it be possible even if
17 Sammis stays open for FirstEnergy to file with PJM
18 and FERC a request to upgrade the transmission
19 facilities connected to that generating unit?

20 THE WITNESS: Would you repeat exactly
21 how he said that.

22 MR. OLIVER: Could the court reporter
23 please read it back.

24 (Record read.)

1 A. I don't know how to answer that when
2 there's not specific issues that we are referring to
3 or something.

4 Q. What additional information would you
5 need?

6 A. Well, detail that said the line was
7 overloaded or a detail that said a piece of equipment
8 had failed.

9 Q. Isn't it true that FirstEnergy has
10 represented to its investors that it intends to
11 achieve earnings growth in part through regulated
12 transmission investment?

13 MR. LANG: Objection, beyond the scope of
14 his testimony.

15 Q. You can answer.

16 MR. LANG: If you know. Do you know the
17 answer to the question?

18 THE WITNESS: Repeat that again.

19 (Record read.)

20 A. Yes.

21 Q. And is a portion of that investment in
22 Ohio?

23 MR. LANG: Continued objection.

24 A. Yes.

1 Q. And does any of that investment involve
2 the transmission facilities that are discussed in
3 your testimony?

4 MR. LANG: Objection.

5 A. The facilities discussed in my testimony
6 are part of FirstEnergy's facilities, yes.

7 Q. Okay. You talked about the proximity of
8 generation to load centers in ATSI. Do you remember
9 that discussion?

10 A. That was brought up several times so.

11 Q. Okay. Where are the major load centers
12 in the portion of ATSI that's located in Ohio?

13 A. There's multiple places where there's
14 load across the ATSI. I don't know how to define one
15 place over another. Where you have more population
16 base, that would be a higher load center.

17 Q. Okay. And you can tell me that you said
18 this is confidential or you would like to discuss it,
19 but the transmission lines connected to Davis-Besse
20 and Sammis, you consider that information
21 confidential?

22 A. Yeah, I think so, yes.

23 Q. Okay. We can do that later. Is Sammis
24 actually located in ATSI?

1 A. No.

2 Q. Okay. Would you agree it's located about
3 5 miles from the Pennsylvania border?

4 A. I know it's near the Ohio line.

5 Q. It's near -- could you say that again?

6 A. Yeah. It's near the edge of Ohio, yes.

7 Q. Okay. Ohio and Pennsylvania, correct?

8 A. Now you are drawing on my geographics. I
9 am trying to figure out if it's Pennsylvania or West
10 Virginia. I am drawing a blank.

11 Q. It could be both, right?

12 A. Well, depending on where it's located,
13 yes. I am drawing a picture. I am trying to
14 visualize the map.

15 Q. Okay. Would you agree that the closest
16 load centers to Sammis are actually Pittsburgh and
17 Wheeling?

18 A. Can you rephrase that.

19 Q. Would you agree that the closest load
20 centers to Sammis are in Pittsburgh and Wheeling?

21 A. Are you referring to like physical
22 distance? Electrical distance?

23 Q. Both, you can answer both.

24 MR. LANG: Objection to its multiple

1 questions. Which one would you like? Yeah, which
2 one would you like him to answer?

3 Q. Let's take it one at a time. Would you
4 agree that the closest load centers from a distance
5 perspective are in Pittsburgh and Wheeling?

6 A. If I remember my geographics, yes.

7 Q. Okay. And electrically speaking those
8 are also the closest load centers, correct?

9 A. Once again, are you referring to
10 electrical or physical distance?

11 Q. Electrical.

12 A. No.

13 Q. What is the closest electrical load
14 center to Sammis?

15 A. Sammis is connected up into ATSI with
16 multiple transmission lines, so based on that, I'm
17 not quite sure. I would think ATSI might be more
18 close electrically.

19 Q. Okay. When you say ATSI, let's clarify
20 that. Are you considering the entire ATSI footprint
21 as a load center?

22 A. I'm considering it an area. There are
23 different lines that go to different areas.

24 Q. Okay. Now, if you were to track where

1 the electrons from Sammis go, do the majority of them
2 stay in Ohio, or do they go out of Ohio?

3 A. I don't know.

4 Q. Would you agree they will go to the
5 closest area where there is a large amount of
6 electric usage?

7 A. No.

8 Q. Why is that?

9 A. It will go to the area where it's
10 electrically connected where there's usage and how
11 the other flows are on the system.

12 Q. Okay. Thank you. Thank you for
13 correcting my question. Okay. You talked a little
14 bit about redispatching and reactive power. Do you
15 remember that discussion?

16 A. Yes.

17 Q. Would you agree that a natural gas-fired
18 power plant provides more effective reactive power
19 than a coal-fired power plant retirement?

20 A. No.

21 Q. Why is that?

22 A. I don't know why it would be -- I don't
23 know why it would be more effective.

24 Q. Would you agree that for purposes of

1 managing reliability on the electric grid a natural
2 gas-fired facility is more nimble and can respond to
3 changes in load more quickly than a coal-fired power
4 plant?

5 MR. LANG: Objection to form.

6 A. I don't know.

7 Q. Is there a reason why you don't know?

8 A. I don't know. I guess it could vary
9 based on the type of unit and when you vary from one
10 unit to the other so I don't know.

11 Q. Would you agree that a coal-fired power
12 plant, generally speaking, takes longer to ramp up
13 and down than a natural gas-fired power plant?

14 A. I don't know those details either.

15 Q. Do you have a background in generation
16 dispatch, Mr. Phillips?

17 A. No.

18 Q. Okay. So if I asked you the same
19 question, do you have an opinion whether a natural
20 gas-fired power plant can ramp up and down quicker
21 than a nuclear power plant?

22 MR. LANG: That's a different question.
23 Do you know the answer to that one?

24 A. I do know nuclears take longer to ramp up

1 and ramp down because of the nature of how they are
2 made in general.

3 Q. Okay. And I apologize for jumping
4 around, but we talked a little bit about the PJM
5 queue, and in your testimony you mention that many
6 plants that have a feasibility study in the PJM queue
7 are not built; is that correct?

8 A. Now, where are you referring to? Make
9 sure I am looking at the same thing.

10 Q. I think I am on page 7.

11 A. Okay. What line?

12 Q. Page 7, line 7, is where the question
13 starts, and it's just that whole answer lines 7
14 through 15.

15 A. Okay.

16 Q. And I just want to ask some background
17 about the PJM queue. First, can you identify what a
18 feasibility study is?

19 A. PJM does a number of different studies
20 when a generator is -- enters the queue to come -- to
21 try to get interconnected. And as you go through the
22 studies, they run a variety of different studies to
23 determine what the impact is to the transmission
24 system.

1 Q. Okay. And your testimony is that only
2 about 14 percent of the plans that have feasibility
3 studies are actually built, correct?

4 A. Yeah, 14 percent of the plants that
5 actually enter into the feasibility study phase go
6 into service.

7 Q. Okay. And when you say "enter," do you
8 mean enter or complete the feasibility phase?

9 A. Enter.

10 Q. Okay. And are you familiar with the key
11 that they use in the PJM queue? Do you know how they
12 have a yellow circle or a green circle or various
13 different keys?

14 A. Yeah. I don't -- I don't remember.

15 Q. Okay. Are you familiar with the
16 difference between an interim study and a complete
17 study?

18 A. Can you repeat that again.

19 Q. Are you familiar with the difference
20 between an interim study and a complete study would
21 actually have a document posted? Let me scratch
22 that.

23 Here is an easier way to say, if you are
24 looking at the PJM queue and the document showing the

1 PJM feasibility study is actually posted, would you
2 consider that to be a more escalated status than when
3 a unit begins the feasibility study?

4 A. Can you repeat that again.

5 Q. Sure. A minute ago we were talking
6 about, okay, there's -- you saw a difference between
7 when a unit starts the feasibility study and then
8 when a unit completes the feasibility study; is that
9 correct?

10 A. Talking about enter the feasibility study
11 and actually was put into service.

12 Q. Okay. Maybe I will take one more step
13 back further. Okay. You mention 14.6 percent of
14 units that enter the feasibility study phase actually
15 go into service. When you are saying when they enter
16 the feasibility study phase, are you referring to
17 when they have completed the feasibility study phase
18 or at an earlier -- earlier status?

19 A. Earlier status.

20 Q. Okay. Do you know what portion of units
21 that complete the feasibility study are actually --
22 have a probability of going to service?

23 A. I do not remember off the top of my head.

24 Q. Would you agree it's a higher number than

1 14.6 percent?

2 A. I'm not sure I am following the math.

3 Q. Okay. Would you agree that you are
4 testifying that when a unit -- in your testimony you
5 are referring to just the commencement of the
6 feasibility study, correct? Not the completion.

7 A. Correct.

8 Q. Okay. And when a unit commences a
9 feasibility study, there is a 14.6 percent
10 probability of going to service, correct?

11 A. Yes.

12 Q. And when they are at a more advanced
13 stage, when they actually complete the feasibility
14 study, would you agree there is a higher likelihood
15 than 14.6 percent of going into service?

16 A. Well, the -- I am trying to compare --
17 the percentages are all something different. You
18 have got to compare it off the same number of units
19 or what you are comparing it to so.

20 Q. Yes, it is.

21 A. So without seeing the numbers, I can't
22 speak to what number you are referring to.

23 Q. Okay. Let's talk about the various --
24 the various stages. What are the other stages in the

1 PJM queue after the feasibility study?

2 A. They go through an impact study and then
3 a facility study.

4 Q. Okay. And you would agree that it's a
5 sequential process, correct?

6 A. Yes.

7 Q. And with each stage in the sequence,
8 would you agree it's more likely that a plant will be
9 built?

10 A. Once again, comparing to -- comparing to
11 what? If you are comparing percentages, you have to
12 compare them apple to apple so.

13 Q. And can you explain what you mean by you
14 have to compare apples to apples? I'm sorry, I am
15 not following you.

16 A. The 14 percent refers to all the
17 generators that come in, so then when you come out of
18 the feasibility study, there are less -- generators
19 could have already dropped out, so, now, it's not
20 the -- not the same base that you are trying to
21 calculate percentages on, so you've already had
22 generators left so, now, if you try to compare the
23 same number to a different base, the percentage is
24 automatically higher so that's -- that's -- it's -- I

1 can't relate the one percentage to the other. Now,
2 you are talking about a different set of generators.

3 Q. If you are looking at the PJM queue,
4 would you agree that the more phases the unit has
5 gone through the more likely the unit will be built?

6 THE WITNESS: Can you repeat that
7 question back for me.

8 (Record read.)

9 A. Yeah, I am getting messed what
10 percentages you are trying to get me to compare
11 against.

12 Q. Okay. If you -- if you had to bet
13 between two units, if you are looking at the
14 generation queue, if one unit only has a feasibility
15 study and another unit has a feasibility and impact
16 study, which unit would you think is more likely to
17 be built?

18 A. I don't know. They drop out of all
19 portions of the queue.

20 Q. Did you evaluate the amount of units that
21 have feasibility and impact studies that are actually
22 constructed historically?

23 A. Yes. PJM provided those information
24 by -- by process exactly what the percentages were

1 that drop out.

2 Q. And you just don't remember the
3 percentage.

4 A. Yeah, I don't remember the percentages
5 off the top of my head. I just know it reduces as
6 you go through the steps, but I don't remember the
7 exact percentages.

8 MR. OLIKER: And there are -- I'm sorry.
9 Could I have his last part of his answer read,
10 please.

11 (Record read.)

12 Q. And when you say reduces as it goes
13 through the steps, are you saying that the further
14 you go along in the process of the PJM queue the more
15 likely that a unit is to be built?

16 A. No. What I am referring to is the
17 percentages. If you start from the very beginning
18 with the same base of generators, there's generators
19 that drop out as you go along so there is generators
20 that drop out at the feasibility stage. There is
21 generators that drop out after they have an impact
22 study, generators that drop out after they have a
23 facilities study. There is even generators that drop
24 out after they have an interconnection agreement.

1 Q. Okay. And that's my point is -- now, I
2 think I understand what you are saying. If you
3 decrease the base with each step and you only
4 consider the units that proceed from feasibility
5 study to impact study, would you agree that there is
6 a higher percentage of units constructed with each
7 phase?

8 MR. LANG: Objection, asked and answered.

9 A. Yeah. Unless I was looking at the
10 numbers, I don't remember what the numbers are.

11 Q. Okay. And you talk about three phases,
12 feasibility, impact, facilities. Would you agree
13 there are additional steps in the PJM generation
14 queue?

15 A. Yeah, those are the three study phases.
16 I know they have construction agreements. They have
17 interconnection agreements.

18 Q. When a unit has an interconnection
19 agreement, do you think it will be built?

20 MR. LANG: Objection.

21 A. I don't know. If you look at the
22 statistics, even those drop out.

23 Q. Would you agree it's significantly less?

24 A. Without seeing the numbers, no.

1 Q. Okay. So what steps need to take place
2 in the PJM queue for you to consider it to be likely
3 to be built?

4 MR. LANG: Objection. Calls for
5 speculation and beyond the scope of his testimony.
6 If you can answer.

7 A. Yeah. I can't -- that's what I said, the
8 numbers show them dropping out all along this stage
9 even up to the time they have interconnection
10 agreements.

11 Q. Okay. Switching gears you identify in
12 your testimony a billion dollars in transmission
13 upgrades that FirstEnergy completed as a result of
14 the retirements from 2012 to 2015, correct?

15 A. No. Where are you -- referring to what
16 now? Say that again, please.

17 Q. I believe it's pages 6 and 7. Actually
18 page 6, lines 11 through 14.

19 A. Yes, that refers to the identification of
20 38 projects, yes.

21 Q. Okay. And just one minute.

22 Now, the 2,400 megawatts, I was trying to
23 follow this math in the earlier cross-examination,
24 that 2,400 megawatts is encompassed in the 422 that's

1 on your workpaper, correct?

2 A. Which --

3 Q. On page 5.

4 A. Page 5. Yes.

5 Q. Are you familiar with the Avon Lake plant
6 closure that was previously owned by GenOn?

7 A. No.

8 Q. Are you aware of the Avon Lake coal-fired
9 plant?

10 A. Yes.

11 Q. Is it your understanding the plant is
12 still running?

13 A. Yes.

14 Q. And are you aware that Avon Lake proposes
15 to retrofit that to a combined cycle power plant?

16 A. No.

17 Q. For the purpose of your model did you
18 consider Avon Lake to be considered open or closed?

19 A. Can you repeat that again. I didn't
20 understand the last part of it.

21 Q. For the analysis that you performed in
22 your testimony was the Avon Lake plant open?

23 A. Can you rephrase by "open."

24 Q. Was it operating?

1 A. I don't remember specifics for that
2 plant, no. I don't know.

3 Q. Okay. That's fine. Okay. Would you
4 agree that the transmission upgrades you identify,
5 the \$1 billion for the 2012 to 2015 closures, was
6 largely required due to a lack of local reactive
7 power?

8 A. It's one of the reasons.

9 Q. Do you know if those upgrades would have
10 been necessary if a combined single natural gas power
11 plant had been built in what is known as the
12 Cleveland LPA?

13 A. I don't know.

14 Q. Okay. I will try not to be repetitive,
15 but we've talked about a few other planned power
16 plants with Mr. Soules. And would you agree that
17 several of the plant facilities are in close
18 proximity to Davis-Besse and Sammis?

19 A. Can you rephrase specific.

20 Q. Sure. Would you agree that the Carroll
21 County facility is located approximately 30 miles
22 from Sammis?

23 A. I don't -- Carroll County, I don't know.

24 Q. Would you anticipate -- do you know

1 whether the Carroll County facility would utilize the
2 same transmission line as Sammis?

3 A. No, I don't believe so.

4 Q. If it was constructed, do you believe it
5 would alleviate any of the transmission constraints
6 you've identified in your testimony?

7 A. I don't know.

8 Q. But you haven't performed that analysis,
9 have you?

10 A. Can you rephrase -- what was the
11 question.

12 Q. Have you analyzed the impact on
13 reliability assuming Sammis was to close but
14 Lordstown would be constructed?

15 MR. LANG: Different question.

16 A. No.

17 Q. Would you agree that the Lordstown
18 facility is proposed to be located on the Highland --
19 Sammis and Highland-Mansfield transmission lines?

20 A. Yes.

21 Q. Does that indicate to you that it is
22 along one of the same transmission lines --

23 A. Yes.

24 Q. -- as Sammis?

1 A. Yes.

2 Q. Would you agree that the Lordstown
3 facility would be located in ATSI?

4 A. I don't know the exact physical location,
5 so I don't know for sure.

6 Q. Would you agree that it's located about
7 60 miles north of Sammis closer toward the center of
8 ATSI's load center than Sammis?

9 MR. LANG: Objection, asked and answered.

10 A. Yeah, I don't know the exact physical
11 location.

12 Q. Would you agree that the Oregon Clean
13 Energy facility is located about 20 miles from
14 Davis-Besse?

15 A. I don't know the exact miles.

16 Q. Would you agree it's approximately 20
17 miles?

18 MR. LANG: Objection, asked and answered.

19 A. I don't know.

20 Q. Do you know if the Oregon Clean Energy
21 facility is located on the same transmission line as
22 Davis-Besse?

23 A. I don't remember. I don't remember.

24 Q. Okay. Assuming the Oregon Clean Energy

1 facility is located at the same transmission line
2 within 20 miles of Davis-Besse, would you agree if
3 Davis-Besse were to close and the Oregon Clean Energy
4 facility were to be constructed, transmission
5 upgrades would not be necessary?

6 MR. LANG: Objection, assumes facts and
7 incomplete hypothetical. You can answer if you can.

8 A. No.

9 Q. Why do you not agree?

10 A. No. 1, unless it's built back exactly in
11 the same place as the generator leaves, connected
12 exactly the same way with the same amount of
13 characteristics from a reactive and a megawatt, I
14 would have to have it modeled exactly to know what
15 the results are going to be for the load flow.

16 Q. And you didn't perform that model, did
17 you?

18 A. What -- perform what model?

19 Q. Well, let me ask it very simply, have you
20 performed an analysis with the Davis-Besse closed and
21 the Oregon Clean Energy facility was constructed to
22 determine the impact on the reliability or the
23 necessity to upgrade transmission lines?

24 A. Yes.

1 Q. What was the results of that analysis?

2 A. The results, we had Oregon Clean Center
3 was included in the model for the studies we ran that
4 were in my testimony.

5 Q. You talk about the reliability of natural
6 gas-fired generation in your testimony. I believe
7 it's on page 6. And if a natural gas plant has firm
8 pipeline transportation, do you agree your concerns
9 regarding natural gas would decrease?

10 A. No.

11 Q. And why is that?

12 A. Because even with -- there's no on-site
13 storage so there's lots of different types of events
14 that could still interrupt the supply source.

15 Q. Are you aware some natural gas-fired
16 power plants have dual fuel capability?

17 A. Yes.

18 Q. I mean, do you consider that as on-site
19 storage?

20 A. I don't know.

21 Q. If a natural gas-fired plant has dual
22 fuel capability with oil on site, would your concerns
23 regarding natural gas be decreased?

24 MR. LANG: Objection.

1 A. Yeah. I don't know. I don't know. It's
2 on site. I don't know what the day's supply is. I
3 don't know.

4 Q. You've also indicate -- I'm sorry, one
5 second.

6 On page 5 when you indicate on lines 2
7 through 4 that your testimony will address the impact
8 that a closure of the plants would have on electric
9 prices, are you referring to hourly prices or price
10 impacts as a result of transmission upgrades?

11 A. Prices because of transmission upgrades.

12 MR. OLIKER: Okay. If I could have just
13 one minute.

14 Q. Mr. Phillips, going back to my
15 questioning from earlier, when did you perform your
16 analysis of the potential transmission upgrades that
17 would be necessary?

18 A. It was in 2014.

19 Q. When in 2014?

20 A. I don't know the exact date.

21 Q. Well, is there a reason you didn't update
22 your analysis between 2014 and when you filed your
23 testimony on May 4 of 2015?

24 A. Can you repeat that back. I missed part

1 of that question.

2 Q. Is there a reason you didn't update your
3 analysis for the January, 2015, PJM peak demand
4 report?

5 A. Yes. We stayed with the assumptions that
6 PJM had in their latest model at the time we run the
7 study, so we kept those consistent.

8 Q. Would you agree when you filed your
9 testimony you knew PJM had revised its load forecast?

10 A. Yes.

11 Q. And you didn't rerun your model knowing
12 that your assumptions were not correct?

13 MR. LANG: Objection on multiple grounds
14 but mischaracterizes his testimony. It's
15 argumentative and basically false but why don't you
16 just try rephrasing the question, Joe.

17 Q. Is there -- Mr. Phillips, were you
18 concerned at all before you submitted your testimony
19 that your results may have changed as a result of
20 PJM's load forecast change?

21 A. No.

22 Q. Why is that?

23 A. Because our results were based on the
24 2019 view based on all the assumptions that were used

1 at that time in that model so to have consistent
2 results go with the best assumptions PJM had at the
3 time with everything tied together and not just
4 randomly changing assumptions.

5 MR. OLIKER: Okay. With the exception of
6 potentially confidential questions, I think that's
7 all I have.

8 MR. LANG: Dane Stinson was next on my
9 list. Dane, are you there? May not be.

10 Kevin Moore, OCC. We put everyone to
11 sleep.

12 That's all I had on my list for the
13 public version. Does anyone -- have I missed anyone
14 that has questions for the public version? Going
15 once.

16 Let's take -- let's just take 5 minutes
17 and then jump onto the confidential line.

18 (Recess taken.)

19 (CONFIDENTIAL PORTION EXCERPTED.)

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1 State of Ohio :
2 County of Summit : SS:

3 I, Rodney L. Phillips, do hereby certify that
4 I have read the foregoing transcript of my deposition
5 given on Wednesday, July 1, 2015; that together with
6 the correction page attached hereto noting changes in
7 form or substance, if any, it is true and correct.

8 
Rodney L. Phillips

9 I do hereby certify that the foregoing
10 transcript of the deposition of Rodney L. Phillips
11 was submitted to the witness for reading and signing;
12 that after he had stated to the undersigned Notary
13 Public that he had read and examined his deposition,
14 he signed the same in my presence on the 13th day
15 of July, 2015.

16 
17 Notary Public

18 My commission expires MAY 22, 2019.

19 - - -



Tonya Tillman
Resident Summit County
Notary Public, State of Ohio
My Commission Expires: 05/22/2019

ERRATA SHEET

Please do not write on the transcript. Any changes in form or substance you desire to make should be entered upon this sheet.

TO THE REPORTER:

I have read the entire transcript of my deposition taken on the 1st day of July, 2015, or the same has been read to me. I request that the following changes be entered upon the record for the reasons indicated. I have signed my name to the signature page and authorize you to attach the same to the original transcript.

Page	Line	Change	Reason
17	17	SEAMAN'S to Siemens	spelling
131	6	Signer to Syner	spelling
131	6	Machour to Mackauer	spelling
181	24	422 t. 4,292	number on worksheet was 4,292

Date 7-13-15 Signature: Rodney J. Phillips

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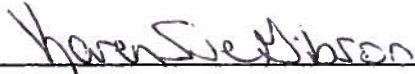
CERTIFICATE

State of Ohio :
County of Franklin : SS:

I, Karen Sue Gibson, Notary Public in and for the State of Ohio, duly commissioned and qualified, certify that the within named Rodney L. Phillips was by me duly sworn to testify to the whole truth in the cause aforesaid; that the testimony was taken down by me in stenotypy in the presence of said witness, afterwards transcribed upon a computer; that the foregoing is a true and correct transcript of the testimony given by said witness taken at the time and place in the foregoing caption specified and completed without adjournment.

I certify that I am not a relative, employee, or attorney of any of the parties hereto, or of any attorney or counsel employed by the parties, or financially interested in the action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 6th day of July, 2015.


Karen Sue Gibson, Registered
Merit Reporter and Notary Public
in and for the State of Ohio.

My commission expires August 14, 2015.
(KSG-6063)

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Case No(s). 14-1297-EL-SSO

Summary: Deposition (Public) of Rodney L. Phillips electronically filed by Mr. Tony G. Mendoza on behalf of Sierra Club