

1 PLACE: Dobbs Building, Raleigh, North Carolina
2 DATE: Tuesday, January 29, 2019
3 TIME: 9:30 a.m. TO 12:30 p.m.
4 DOCKET NO.: E-100, Sub 101
5 E-2, Sub 1159
6 E-7, Sub 1156
7 BEFORE: Chairman Edward S. Finley, Jr., Presiding
8 Commissioner ToNola D. Brown-Bland
9 Commissioner Jerry C. Dockham
10 Commissioner James G. Patterson
11 Commissioner Lyons Gray
12 Commissioner Daniel G. Clodfelter
13 Commissioner Charlotte A. Mitchell
14

15 IN THE MATTER OF:
16 Petition for Approval of Generator
17 Interconnection Standard
18 and
19 Joint Petition of Duke Energy Carolinas, LLC,
20 and Duke Energy Progress, LLC, for
21 Approval of Competitive Procurement of
22 Renewable Energy Program
23 Volume 3
24

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1 PROCEEDINGS

2 CHAIRMAN FINLEY: Good morning. Back on the
3 record. Ms. Harrod.

4 MS. HARROD: Thank you, Mr. Chairman.

5 JOHN W. GAJDA,

6 GARY R. FREEMAN,

7 JEFFREY W. RIGGINS; Having been previously sworn,

8 Testified as follows:

9 CROSS EXAMINATION BY MS. HARROD:

10 Q Good morning, gentlemen. I'm Jennifer Harrod
11 representing the Attorney General's Office. How are you?

12 A (Gajda) Fine, thank you.

13 Q So I have not specifically earmarked my
14 questions for a particular witness. I think most of them
15 are going to be appropriate for Mr. Freeman. But I'm
16 interested in getting Duke's answer to these questions,
17 so you all don't stand on ceremony, as you have not been.
18 If you have something to contribute, please feel free to
19 jump in.

20 Can you explain a little bit -- I think it
21 would give me some context for my questioning. Do -- do
22 you all work in the same division or department?

23 A (Freeman) Yes. All three of us actually work
24 together. You know, structurally, organizationally, Mr.

1 Gajda and Mr. Riggins report to me.

2 Q Okay. How many people are in your chain of
3 reporting?

4 A Oh, gosh. I don't --

5 Q Approximately.

6 A I don't even keep track anymore. Roughly
7 40-ish, 50-ish, because I have the interconnection team,
8 which is Mr. Riggins' team --

9 Q Okay.

10 A -- Mr. Gajda's team, which Mr. Gajda has moved
11 on to a different role. There were four very senior
12 technical engineers on his team that worked on studies
13 and integration issues and so forth. And I also have the
14 power purchase function, and there's roughly 12 to 15
15 people in that organization.

16 So, you know, every one of these projects
17 requires essentially two contracts. There's an
18 Interconnection Agreement, which is a contract. That's
19 the technical agreement. And then there's the Power
20 Purchase Agreement, which is, you know, the pricing and
21 the term and those type of things, which is embedded in
22 the Power Purchase Agreement.

23 Q I see.

24 A So both those, you know, functions are two of

1 the -- those are the two critical kind of pieces to
2 actually connecting up and, you know, operating and
3 paying for the output from these facilities.

4 Q Okay. That's helpful. Thank you. And then --
5 and so does that group have a name?

6 A Well, our bigger organization is -- is -- we
7 refer to it as the DET organization. It's the
8 Distributed Energy Technology Department, and -- and
9 we're one of several groups within that department.

10 Q And then -- okay. How does that fit in, then,
11 to the -- to the larger Duke Energy Corporation
12 structure?

13 A Oh, gosh.

14 Q I know. That's a very open-ended question.

15 A Well, let -- let me kind of answer it this way.
16 We recognized, gosh, four or five years ago that, you
17 know, renewable energy and solar was -- was here and --
18 and growing significantly, so, you know, prior to that
19 point in time, you know, a lot of this work was done,
20 I'll call it, part-time. It was secondary function
21 within a lot of different departments within the Company
22 --

23 Q Uh-huh.

24 A -- so the DET organization, as we describe it,

1 was formed by our CEO Lynn Good to say, you know, we need
2 to bring all the functions together into one organization
3 so that we can, you know, really focus and dedicate, you
4 know, a hundred percent of our time towards promoting
5 solar and renewable energy.

6 Q Okay. And when was that formed, approximately?

7 A Oh, gosh. Four or five years ago, roughly.
8 Yeah. I'll say like 2013-ish, you know. So we merged
9 with Duke in 2012. In 2012 -- it was fascinating. We
10 had very little renewable energy on the system. I think
11 Mr. Gajda suggested in 2010, 2011 there was only 20 MW on
12 the system, so after the merger there was very little and
13 then, you know, things started really, I'll call it,
14 exploding, you know, in the -- the 2012-ish, '13 time
15 frame.

16 Q Okay. Thank you. That -- that's -- that is a
17 very helpful context. So does -- does Duke acknowledge
18 that the -- sorry, I've got a frog in my throat this
19 morning. Does Duke acknowledge that the solar developers
20 or the renewable developers are its competitors?

21 A I would say no. I mean, we've got a, you know,
22 a group that's focused on, you know, Duke ownership of
23 solar, and I could, you know, I guess agree that maybe
24 there's, you know, a -- you know, some competition there,

1 but for the most part, you know, most all of Duke is --
2 is not a competitor with solar. In fact, we're the, you
3 know, the operator of the grid and, you know, our
4 responsibility is, of the Utility, to interconnect any
5 and every, you know, customer developer that's proposing
6 a project within the system. So I would say, you know,
7 in general we are not competitors.

8 In fact, even with our, you know, Duke
9 ownership team, you know, there's -- there's maybe only
10 been competition kind of introduced recently with the
11 competitive procurement process where you're -- you're
12 bidding your project in, you know, as part of that
13 program.

14 Q Okay.

15 MS. HARROD: Mr. Chairman, I would like to
16 introduce an exhibit at this time.

17 CHAIRMAN FINLEY: Very well.

18 MS. HARROD: I'm experimenting here. It's a --
19 it's a long document, so we -- we've pulled out some
20 pages to be the exhibit and -- but we're also providing a
21 reference copy of the whole document.

22 CHAIRMAN FINLEY: Commissioner Clodfelter will
23 appreciate that.

24 COMMISSIONER CLODFELTER: Thank you.

1 MS. HARROD: It may not work. You -- you all
2 let me know if you don't like it this way. Mr. Chairman,
3 may I ask that -- that this be marked as Attorney
4 General's Office Duke Panel Cross Exhibit Number 1?

5 CHAIRMAN FINLEY: All right. I've got three
6 pieces of paper here. All three is the same exhibit?

7 MS. HARROD: Yes, Commissioner. Is that not
8 stapled?

9 CHAIRMAN FINLEY: Well, there's one here, and
10 there's two other ones.

11 MS. HARROD: Okay. The -- the -- you might
12 have gotten two copies of the exhibit. It's a three-page
13 exhibit, and the big fat copy is just -- is just a
14 reference document. It's not the exhibit.

15 CHAIRMAN FINLEY: All right. Attorney General
16 Cross Examination Exhibit Number 1 shall be so marked.

17 MS. HARROD: Thank you, Chairman. And for
18 clarification in the record, that's a -- that's a -- a
19 four-page document.

20 CHAIRMAN FINLEY: All right. Okay.

21 (Whereupon, Attorney General Duke
22 Panel Cross Examination Exhibit 1 was
23 marked for identification.)

24 Q Mr. Freeman, are you familiar with -- generally

1 familiar with Duke Energy Corporation's 10-K filings?

2 A I'm generally familiar that we are required to
3 file, you know, 10-Ks, 10-Qs, and -- and other SEC types
4 of documents.

5 Q Okay. Let me ask you to turn -- so to identify
6 this for the record, what we've marked as an exhibit is
7 -- is just some selected pages from Duke Energy's last
8 10-K which was amended, so this is -- this was filed in
9 February of 2018. And I would like to ask you to turn to
10 what is the third page of this exhibit which has a page
11 number at the bottom of -- of 10, and under the heading
12 of Competition. Are you there where I am?

13 A Yes.

14 Q Okay. I'll give you a minute just to read
15 those first two paragraphs.

16 A (Reviewing document.)

17 Q So you see that in paragraph one of the -- of
18 the text there under the heading of Competition and then
19 the subheading of Retail, it identifies that with the
20 exception of Ohio where Duke Energy operates, it is the
21 sole supplier of electricity within its service
22 territory, correct?

23 A I'm sorry. You haven't given me a chance to
24 read --

1 Q Take your time.

2 A -- read the two paragraphs to really understand
3 what we're saying here.

4 Q No problem. Take your time.

5 A (Reviewing document.) Okay. I've read the
6 first two paragraphs.

7 Q Okay. So would you agree that the first
8 paragraph under the heading of Retail notes that -- that
9 Duke Energy's subsidiaries are the sole supplier of
10 electricity within their service territories except for
11 Ohio?

12 A I think that's what this is saying, yes.

13 Q Okay. And then the next paragraph says
14 "Competition in the regulated" electrical -- sorry --
15 "Competition in the regulated electric distribution
16 business is primarily from the development and deployment
17 of alternative energy sources including onsite generation
18 from industrial customers and distributed generation,
19 such as private solar, at residential, general service
20 and/or industrial customer sites." Do you see that?

21 A Yes.

22 Q Okay. So would you agree with me that Duke
23 Energy Corporation has informed its shareholders that --
24 that solar developers are its primary competitors?

1 A I -- I guess, you know, if you read the
2 statement, I guess that was what -- is what you would
3 conclude from that. It's -- I mean, it's clear it says
4 that, you know, it's primarily from the development of
5 alternative resources from industrial and -- and other,
6 you know, private solar, yes.

7 Q Okay. And then turning to the second page of
8 this exhibit, the selected pages from Duke's 10-K, there
9 are some risk factors listed --

10 A I'm sorry. You're on page 6 of 402?

11 Q Correct.

12 A Okay.

13 Q The top -- top of the page says 6 of 402.

14 That's correct. So these are Cautionary Statements
15 Regarding Forward-Looking Information. And if you see at
16 the end of that first paragraph, it says "Various factors
17 may cause actual results to be materially different than
18 the suggested outcomes within forward-looking statements;
19 accordingly, there is no assurance that such results will
20 be realized. These factors include, but are not limited
21 to:" You see that?

22 A Yes.

23 Q Okay. So if we drop down several bullet points
24 there, do you see that one of the risk factors identified

1 by Duke Energy to its shareholders is "Federal and state
2 regulations, laws and other efforts designed to promote
3 and expand the use of energy efficiency measures and
4 distributed generation technologies, such as private
5 solar and battery storage, in Duke Energy service
6 territories could result in customers leaving the
7 electric distribution system, excess generation resources
8 as well as stranded costs." Do you see that?

9 A Yes, I do.

10 Q Okay. So do you understand that Duke Energy
11 Corporation perceives laws that encourage renewable
12 energy to be a risk factor for its business?

13 A I think that's how you would interpret what
14 we're seeing here, yes.

15 Q Okay. Witness Lucas for the Public Staff
16 testified "The Utilities must act in good faith to
17 interconnect, but are incentivized not to. PURPA allows
18 renewable energy projects to compete directly with the
19 primary portion of the Utility's business that does make
20 money, building rate base." Do you agree with that
21 statement?

22 A Read that statement again, please.

23 Q I'm happy to tell you where it is if you'd
24 rather go and read it yourself or I'll read it to you,

1 whichever.

2 A Just read it again.

3 Q Okay. Sure. "The Utilities must act in good
4 faith to interconnect, but are incentivized not to.
5 PURPA allows renewable energy projects to compete
6 directly with the primary portion of the Utility's
7 business that does make money, building rate base."

8 A Okay.

9 Q So do you agree that the Utilities are -- are
10 incentivized not to act in good faith to interconnect?

11 A I think you need to describe what you really
12 mean by "incentivize." I think the first part of that
13 statement is -- is exactly what we're obligated to do and
14 exactly what we do, is we are required essentially by law
15 or regulation to interconnect any and every facility
16 that, you know, requests to interconnect to the grid.

17 Q Okay. And do you agree that there are no
18 financial incentives for you to do so?

19 A I would agree that there are no financial
20 incentives to do so, yes.

21 Q Okay. So just to spin that logic out a little
22 bit, if -- if Duke Energy builds some kind of plant, some
23 kind of energy generation using its own capital, then
24 those assets go into Duke's rate base and Duke has an

1 opportunity to earn a rate of return on those, correct?

2 A Correct.

3 Q But if somebody else builds energy resources
4 and connects those to the grid, then those don't go into
5 Duke's rate base, correct?

6 A That is correct.

7 Q Okay. And the same thing for transmission and
8 distribution, right? If -- if Duke builds a line or a
9 substation, then with -- using its own capital or capital
10 from its investors, then that goes into Duke's rate base,
11 correct?

12 A I mean, that's a -- there's a pretty
13 complicated, you know, answer to that question because if
14 we -- you know, generally, if we build or, you know,
15 construct upgrades for the distribution system, those
16 would go into the general rate base whether they're in
17 North Carolina, South Carolina, whatever state. If it's
18 a transmission network upgrade, a portion of that goes
19 into the general rate base and a portion of that goes --
20 you know, is recovered through OATT, you know, customers
21 through transmission service customers. Could be our
22 wholesale customers or could be, you know, a facility
23 that's wheeling across our system.

24 Q Okay. Thank you for that clarification. If --

1 with these costs that the -- that the solar developers
2 pay either to interconnect or to upgrade facilities to
3 allow them to safely interconnect, those -- those
4 expenditures do not go into Duke's rate base, correct?

5 A That is correct. I mean, if -- if a -- a
6 project is triggering an upgrade and we use the term, you
7 know, cost causer, that if that facility is causing costs
8 to be incurred, then we require that, you know, that
9 project to pay those costs, and that does not go into the
10 rate base. It's reflected in rate base as a revenue
11 reduction supporting rate base.

12 Q Okay. So how -- in your -- your role, Mr.
13 Freeman, from your perspective, how does Duke weigh its
14 duty to its shareholders to maximize their profits with
15 its duty to follow the law and interconnect renewable
16 energy to the grid?

17 A Ask the question again. How do we weigh -- ask
18 the question again.

19 Q How do you -- how do you -- let me use a
20 different word. How do you balance your duty to the
21 shareholders to maximize profits with your duty to follow
22 the law and interconnect solar to the grid?

23 A I'm not sure there's any -- any balance. I
24 mean, it's very clear to us that under the

1 interconnection procedures and the, you know, the
2 policies that have been developed within the state,
3 again, that, you know, any costs incurred by that, you
4 know, interconnecting project are borne by the, you know,
5 by that project, and it does not go into rate base. And,
6 I mean, you're right. I mean, that's, you know, an
7 investment in the grid that's -- that's not, you know,
8 part rate base where the Company does not earn a return
9 on that portion of the investment.

10 Q Do you have -- within DET do you have
11 compliance programs that talk -- that -- that train
12 employees about their duties under the law?

13 A Yes.

14 Q Specifically, this law that we're talking
15 about, PURPA or HB 589.

16 A Let me answer this way. I mean, we've got, you
17 know, kind of corporate compliance departments.
18 Generally, they fall under legal. And, you know, any new
19 program, any new policy or regulatory, you know, change,
20 I mean, you know, our compliance department briefs us on
21 those -- those policies. For example, you know, FERC 845
22 and some of the other, you know, new policies that have
23 been enacted, say, by FERC, you know, our corporate
24 compliance department gets very involved with us to

1 ensure that we're compliant with those requirements.

2 Q For -- for you personally, is a portion of your
3 compensation dependent on the Company's financial
4 performance? And when I say the Company, you're employed
5 by Duke Energy Corporation, correct?

6 A Correct.

7 Q Okay. So is a portion of your -- your personal
8 compensation dependent on Duke Energy Corporation's
9 financial performance?

10 A Well, not my -- not my base -- not my base
11 compensation, but, you know, I am -- I do participate in
12 an incentive, you know, plan, and a portion of that
13 incentive is driven by corporate earnings --

14 Q Okay.

15 A -- very similar to almost every corporation
16 that has any kind of incentive plan.

17 Q And is -- is part of your compensation -- is
18 part of your -- is part of your incentives in your -- in
19 your job driven by your success in interconnecting solar
20 to the grid?

21 A Yes, yes.

22 Q Okay. Can you -- I don't -- and I don't want
23 to get too personal or talk about --

24 A Well, I'm trying to think --

1 Q -- dollars or anything like that, but can you
2 just --

3 A I hesitate because I think about all this --

4 Q -- in general terms --

5 A -- all the kind of pieces, you know --

6 MR. JIRAK: Mr. Chairman, if I could, we're
7 here to consider a set of modifications in the North
8 Carolina connection procedures, and we're now discussing
9 the personal compensation structure for Gary Freeman. It
10 feels like we're a little off topic in terms of relevancy
11 to the topic.

12 CHAIRMAN FINLEY: Well, maybe the Attorney
13 General wants to change the laws in the state as to what
14 the Company is supposed to do, but I think it will -- it
15 is, to some extent, relevant to the witness' credibility
16 so I'll allow it.

17 MS. HARROD: Thank you, Mr. Chairman. I don't
18 have many more questions along this line, you'll be happy
19 to hear.

20 Q Just in general terms, there's no need to get
21 too specific or too personal, but let's talk about your
22 -- your staff. I think you said you -- you had about 40
23 people who are -- who are your indirect or direct
24 reports. How -- how is the compensation of your

1 department geared towards the success of -- of
2 interconnecting solar to the -- or renewable energy to
3 the grid?

4 A I mean, I'm trying to think of -- of all the
5 components of our incentive plan, but, you know, we're
6 held accountable with, you know, connecting up -- I mean,
7 we're held accountable with the results of connecting up
8 solar facilities, so I think we've shared with this
9 Commission and through testimony the success that we've
10 had with connecting solar.

11 You know, I'll kind of reinforce that, you
12 know, we're essentially leading the nation in terms of
13 the amount of solar that we've brought on to the system
14 and -- and it's not specific black and white, but, I
15 mean, that is what we are held accountable, that is what
16 we're challenged, you know, internally pretty much every
17 day, I mean, what are we doing to continue to incent and
18 encourage solar development? That's all of our, you
19 know, staffing increases that we've made.

20 You know, I go back to 2012 when we merged. I
21 had a staff dedicated to -- to renewables of two people,
22 and we had two study engineers and that was it. And, you
23 know, we've increased that. I think you've seen in Mr.
24 Riggins' testimony that we've got now, you know, between

1 our organization and other organizations, if you add
2 construction crews and other engineers, I mean, we've got
3 the staff of hundreds that are supporting this. So I --
4 I -- you know, I'll just say that I think the results
5 speak for themselves. You know, the incentives that
6 we've got internally, the focus that we've got
7 internally, the -- the formation of our organization all
8 lead to the success of what we've done.

9 Q And yet the queue was backed up in 2014,
10 leading to the revamping of the interconnection
11 procedures in 2015 and, you know, that situation still
12 pertains today, that the queue is -- is clogged. I
13 think everybody agrees with that, right?

14 A Yes.

15 Q Okay. So Duke's position in this docket, as I
16 understand it, is that it alone should determine what
17 good utility practices are when it comes to
18 interconnecting renewables to the grid, correct?

19 A I think that's generally what we have
20 represented, yes.

21 Q Okay. And so the result of that is that --
22 that you and -- and the people you supervise are -- are
23 the sole gatekeeper for whether any particular developer
24 will be given a contract to interconnect to the grid,

1 correct?

2 A I think there's, you know, a lot more people
3 than just our organization that are involved in the
4 interconnection process, whether it's distribution
5 planning, transmission planning. I mean, our group is
6 responsible ultimately for executing the Interconnection
7 Agreement, but -- but there's a tremendous effort and a
8 tremendous number of people that go into, you know,
9 developing the -- the studies and the engineering costs
10 that all, you know, feed into that -- that document.

11 Q Okay. Thank you. But all those people are --
12 are employed by Duke Energy Corporation or one of its
13 subsidiaries?

14 A I would say not necessarily. I mean, I'm not
15 sure if we've -- if we've touched on it, but in our
16 distribution organization, you know, we've -- we've hired
17 roughly 40 engineers and -- and other support to help us
18 with the study process. So they are not Duke employees.
19 They're not employees of our subsidiaries. They are
20 employees of -- of, you know, outside engineering
21 consulting firms.

22 Q Okay.

23 A And we use those on a regular basis to support
24 us. Even our construction crews. I mean, probably 90

1 percent of the construction, you know, crews are outside
2 contractors that do work for us.

3 Q Okay. Thank you for that clarification.

4 CHAIRMAN FINLEY: Sometimes I wish you had more
5 control over those contractors.

6 MR. FREEMAN: Of the contractors?

7 CHAIRMAN FINLEY: Yes.

8 Q So -- but ultimately, when -- when we're
9 talking about whether a -- a third party, a developer is
10 going to be allowed to interconnect to -- to the grid,
11 that's -- that's Duke's decision whether they're going to
12 be allowed to and -- and what improvements they're going
13 to need to make in order to allow them to interconnect,
14 correct?

15 A I would maybe challenge that a little bit. I
16 mean, we are obligated to provide a solution to every
17 interconnecting project to connect to the grid. I mean,
18 we have -- we have no, I'll call it, right to deny
19 somebody an interconnection. You know, what happens in a
20 lot of cases when a project withdraws is that the cost to
21 interconnect becomes, you know -- you know, so high that
22 the -- the developer themselves decide that they just
23 can't, you know, they can't, you know, cover that, you
24 know, construction cost, so they withdraw.

1 Q Okay. But the -- but the party who has the
2 responsibility to propose that solution and who has the
3 -- the -- who says what that solution is going to be is
4 Duke.

5 A That's correct.

6 Q Okay. Switching gears a little bit, in -- in
7 this docket you have -- it's been the position, as I
8 understand it, of Duke, and you've -- you've entered into
9 a stipulation with the Public Staff to this effect, that
10 it wouldn't be appropriate for there to be any
11 independent review of the -- of the North Carolina
12 Interconnection Procedures; is that correct?

13 A Well, I think what we agreed to was, and it was
14 suggested by Public Staff, was that we would engage EPRI
15 to look at some of the, you know, the, I'll call them,
16 technical standards, some of the fast track screens and
17 things like that.

18 Q What about with respect to the -- as I
19 understand it, the next round of procedures will probably
20 have quite a bit to do with a cluster study or a group
21 study model. Would -- would Duke think that it would be
22 appropriate to have independent review of those
23 procedures as they're being proposed and developed?

24 A Well, I think the way we envision that process

1 to work is there will be a significant stakeholder
2 engagement process that we would go through. So I would
3 -- I would think through that stakeholder process that,
4 you know, that will, I'll call it, act, if you will, as
5 the, you know, kind of independent whatever you want to
6 call it, overseer of -- of that process.

7 I mean, what we're doing right now is we're
8 following, I think I suggested it yesterday, Public
9 Service Colorado is kind of, from a specific utility
10 company perspective, kind of they've been through the
11 stakeholder process, they've made a filing with FERC, and
12 we're kind of watching that process and we're likely to
13 model, you know, our revisions after that process if
14 that's successful at being approved by FERC.

15 Q Okay. So talking about the stakeholder
16 process, when the Public Staff -- and I -- I could pass
17 this document around, but I -- I'm -- I'm just going to
18 read a little -- a little snippet. When the Public Staff
19 filed a report with this Commission on December 15th,
20 2017, reporting on the stakeholder process about
21 revisions to the North Carolina Interconnection
22 Procedures, the Public Staff stated that "No consensus
23 was reached that reflects resolution of any issues." Do
24 you agree that -- that as of the date of the Public

1 Staff's letter, that that was true?

2 A Say it again, that there was no resolution of
3 any of the --

4 Q What it said was -- so let me back it up a
5 little bit. So -- so there were multiple stakeholder
6 meetings as of, you know, as of December of 2017. There
7 had been multiple stakeholder meetings, correct?

8 A Correct.

9 Q And I believe four working groups, correct?

10 A Yes.

11 Q Okay. And so the -- the phrase that I'm
12 quoting out of that letter says that "No consensus was
13 reached that reflects resolution of any issues."

14 A I -- I mean, I -- I can't speak to that. I'm
15 -- I'm -- the sentence to me is not real clear. There's
16 no resolution to any items that were -- where we did not
17 reach consensus, I think is what it's saying; is that
18 correct?

19 Q I'm sorry. Now I'm going to have to ask you to
20 repeat the question.

21 A Yeah. I'm -- I'm just -- the statement is just
22 not resonating with me. I'm sorry.

23 Q No. That's okay. Let me -- let me -- if I --
24 if I may, let me just hand it to you. It's been filed in

1 the docket so I don't think I need to make this an
2 exhibit, but I would be happy to hand you a copy of it.

3 A I mean, the statement is the statement --

4 MS. HARROD: Mr. Chairman, may I --

5 A -- and I'm not sure what your question is.

6 Q I apologize, Mr. Freeman.

7 MS. HARROD: May I approach the witness?

8 CHAIRMAN FINLEY: Yes, you may. And you might
9 show counsel what --

10 MS. HARROD: I will.

11 CHAIRMAN FINLEY: -- you're going to ask him
12 about.

13 MR. BREITSCHWERDT: Can we stipulate that the
14 Public Staff's letter says what it says?

15 MS. HARROD: Yes.

16 A I'm sorry. Where am -- where am I reading?

17 Q Mr. Freeman, on page 2 of the letter I handed
18 you, the second full paragraph, just -- why don't you
19 just read that first sentence into the record for us?

20 A "The Public Staff, along with other parties,
21 also retained Advanced Energy" that --

22 Q The next paragraph down, please.

23 A Next paragraph. Okay. "While the parties had
24 significant discussions and identified numerous issues

1 that may merit revision, no consensus was reached that
2 reflects resolution of any issues."

3 Q So do you agree or disagree, as of the date of
4 this letter, with that statement by the Public Staff?

5 A Yeah. I -- I think I shared yesterday I did
6 not -- I did not participate in the stakeholder process
7 to any great extent. I'm going to invite my colleagues
8 to -- to comment on that if they could.

9 Q By all means.

10 A (Gajda) Yeah. I can just comment briefly. I,
11 you know -- so I can't speak to exactly that date and in
12 the process because I know it extended -- the entire
13 process extended slightly beyond that date. I think that
14 was a -- I mean, really, it's the Public Staff's
15 statement and not ours, to be clear, but I -- I think
16 it's reflective of the fact that a number of changes,
17 that there was not round consensus on a number of those
18 changes, but as was reported yesterday and as we have
19 stated in testimony, sometime between then and -- and,
20 you know, all of the filings, certainly, for example,
21 Working Group 2 is an example of where the bulk of what
22 that working group worked on did attain consensus. There
23 were some -- not -- not a hundred percent, but we did
24 attain some level of consensus.

1 So, again, I can't speak to -- I don't think
2 any of our witnesses can speak to the level of consensus
3 at that exact date and, again, it's the Public Staff's
4 statement and not ours, but -- but there were consensus
5 reached on some issues by the time we -- we got to the
6 end of the process. I -- the Working Group 2 got into
7 issues around -- around the definition of generating
8 maximum generating capacity and some issues around
9 material modification. There -- there were some
10 consensus on some of those items.

11 Q Thank you, Mr. Gajda.

12 A Okay.

13 Q So my question for the Panel, specifically Mr.
14 Freeman, but not limited to him, is do you expect
15 studying -- reaching consensus around a cluster study to
16 be more complex than reaching consensus around a single,
17 you know, a single queue study model?

18 A (Freeman) Yes. I think, you know -- you know,
19 evolving the process from sequential to -- to a cluster
20 study process will be, you know, a significant challenge
21 to reach consensus. I think -- I can't speak, you know,
22 specifically to Public Service Colorado, but I think in
23 general they reached consensus on, you know, most of the
24 proposal, but yet when you look at the FERC filing, I

1 think there was at least one, you know, intervenor that
2 was not supportive, a number of intervenors that were.
3 But I think, you know, yes, that is going to be a -- a
4 challenging process, stakeholder process to go through to
5 kind of reach, as best we can, a consensus on what makes
6 sense going forward.

7 I think you will hear -- I mean, I think it was
8 suggested even yesterday -- I can't remember if it was
9 NCCEBA or NCSEA -- I know NCSEA has suggested that we
10 move to cluster studies, so I think generally everybody
11 is in agreement that what we're doing today is not
12 sustainable and that we do need to, you know, evolve the
13 process to something different. But the challenge, I
14 think, to your point will be the devil is going to be in
15 the detail in terms of, you know, exactly how we, you
16 know, get to where we want to get, and then even the
17 transition to -- to go from where we are today to where
18 we think we need to go is going to be a challenge, yes.

19 Q So does Duke, after, you know, sort of -- sort
20 of with the benefit of hindsight, having worked through
21 the -- the stakeholder process on -- on trying to come to
22 terms with appropriate revisions to a set of standards
23 that everybody acknowledged needed some revisions, with
24 the benefit of hindsight of that stakeholder process,

1 does -- does Duke see the benefit of -- of doing it
2 differently with respect to a cluster study?

3 A Well, I'm not sure what differently would --
4 would mean or be. I mean, I think we are committed to a
5 stakeholder process that would likely be very similar to
6 what we've used in the past.

7 Q Do you think that I might benefit the process
8 to bring in an independent reviewer who would be, you
9 know, not -- not have a financial incentive one way or
10 the other except to help -- help everybody come to good
11 processes?

12 A I mean, I think we're -- we're still kind of,
13 you know, kind of formulating what that process would
14 look like. I don't think we're opposed. You know,
15 similar to what we did with this particular stakeholder
16 process, we engaged, you know, Advanced Energy to
17 facilitate and support the process.

18 Q Well, to be clear, though, that's -- that's a
19 facilitating role. That's -- they didn't offer their
20 opinion on any particular technical screens or procedural
21 outcomes, did they?

22 A Fair. Yes.

23 Q Okay.

24 A That's true.

1 Q I think these questions are for Mr. Gajda about
2 a little -- a few questions about fast track. In
3 connection with the North Carolina Interconnection
4 Procedures, what's the purpose of having a fast track?

5 A (Gajda) So as I described yesterday, the -- the
6 -- the concept, as -- as we see for any set of
7 interconnection standards that we've classically seen
8 anywhere, is that they're really designed to allow
9 projects that are potentially perhaps smaller. There is
10 an -- there's a general acknowledgment that size of
11 project in kW or MW is a significant factor, so there's
12 just a general acknowledgment that the size of the
13 project -- smaller projects that are perhaps
14 inconsequential are processed as fast and as reasonable
15 as possible, and larger projects that have impact are
16 studied for their impacts because they likely have a
17 greater level of impact. I think that's an easy way to
18 -- to say it.

19 Q Okay. So conceptually, if there's a fast track
20 where 98 percent of the projects fail and have to go to a
21 next level of review, then would you agree that fast
22 track isn't working as designed at that point?

23 A So it's -- I guess what I would say is that
24 it's -- it's tough for Duke to assess the effectiveness

1 of the standards because what -- what we've tended to
2 focus on are the results and the timing. So if a project
3 "fails" fast track, it goes into supplemental review and
4 then is very swiftly and promptly interconnected
5 thereafter. The fact that there was a procedural step in
6 there that merit, you know, that in some -- in many cases
7 occurs, really we, you know, we find that to not
8 necessarily be the matter that we're focusing on. We're
9 focusing on a -- the interconnection happening in a -- in
10 a reasonable period of time and -- and really at the end
11 result. So from that perspective we're not -- it's hard
12 for us to -- to say that that doesn't mean it's
13 effective.

14 The screen is, as we pointed out yesterday,
15 this -- that specific screen, the one that often has
16 failed, and a number of those screens are, you know, 20,
17 25 years old, and we've committed to engaging with EPRI
18 in reviewing those screens. Those screens probably need
19 a review. While the screens are what they are, we --
20 it's -- it's only responsible for us to evaluate the
21 screens as they exist.

22 A (Freeman) I'd like to add one -- one other
23 comment to that. You know, the whole fast -- the
24 combination of the fast track process and the

1 supplemental review generally -- let me back up. I mean,
2 every project has a right to interconnect to the grid.
3 They're all kind of tracked in terms of when they request
4 interconnection to the grid. Projects that qualify for
5 fast track and supplemental review are generally your
6 smaller projects, so I think the effectiveness of it is,
7 is they generally do get connected much, much faster than
8 any of the larger projects, even if a larger project
9 entered the queue much, much earlier than any of the fast
10 track or -- or, you know, medium size projects.

11 So I would suggest that the fast track and
12 combination of supplemental review is working exactly
13 like it was intended, to move those projects through and
14 get those connected up and not subject them all to a full
15 system impact study review.

16 Q So as you note -- and Mr. Freeman, these are --
17 these are smaller projects. They may be individual homes
18 or -- or businesses. They're not -- they're not
19 necessarily sophisticated customers. So if they have to
20 pass from fast track into supplemental review, that's
21 another procedure, another filing fee, another delay,
22 another -- another step in the bureaucratic round that
23 those -- that those smaller, less sophisticated customers
24 have to -- have to go through, correct?

1 A I'm not sure I would characterize it as
2 bureaucratic review. You know, that may be a little bit
3 harsh. But, you know, the whole idea of the whole study
4 process is to, you know, evaluate projects to ensure
5 that, you know, that they're not impacting other
6 projects. And in most cases, I mean, like we've
7 suggested, that the screens, you know, these projects
8 fail the screen, but when we look, you know, at some
9 small amount of true study, we can -- we can approve
10 those projects and move them forward.

11 You know, we've also proposed, I think in our
12 redline, that a project now has the option to move past
13 -- past fast track and move straight to supplemental
14 review which does reduce what you imply as one of the
15 bureaucratic parts of -- of the process. So, I mean,
16 we're doing all we can to, you know, try and find ways to
17 improve the efficiency of, you know, of the process, but,
18 you know, as we've seen -- I mean, I suggested why
19 yesterday. I mean, they're starting to see even small
20 projects starting to impact the grid.

21 Q I didn't intend to use a pejorative term. I --
22 I -- I see I touched a nerve, and that was not my
23 intention.

24 A Oh, no. I'm just -- I'm kind of half teasing.

1 A (Riggins) Can I also comment that --

2 Q Of course.

3 A -- the customer that you described, the
4 residential customer, non-sophisticated type customer,
5 almost all of those are processed through Section 2
6 study, which if you look at the track record, I think
7 those are processed very quickly in a high degree of
8 interconnection. So I just want to make sure we're clear
9 on Section 2 versus Section 3 studies and that we don't
10 confuse that myself as a homeowner would have a different
11 track and much more efficient track to interconnection.

12 Q Thank you.

13 A (Freeman) And also I want to make one other
14 comment. We -- we refer to that interconnection request
15 as the customer, but every customer, I think almost
16 without exception, utilizes an installer if it's a
17 smaller project. So, you know, you've got a, you know,
18 essentially a finite group of installers that are very
19 familiar with how the process works. So it's not like
20 every customer is kind of going through this bureaucratic
21 process, you know, themselves. They're working through,
22 you know, through installers, and with larger projects
23 they're very, you know, they're very sophisticated
24 developers.

1 Q I would like to turn to another topic. Mr.
2 Freeman, I believe you testified earlier that -- that
3 your group works with distribution and transmission
4 planning entities within Duke. Is -- am I correct about
5 that?

6 A That's correct.

7 Q Okay.

8 A And -- and many, many other departments as
9 well.

10 Q So in -- in this docket the developer -- some
11 of the -- some of the intervenors have requested that
12 Duke make public hosting capacity maps, correct?

13 A That's correct.

14 Q And Duke opposes that -- that proposal,
15 correct?

16 A Well, I mean, what we have supported, and we've
17 done it with CPRE, is that we are, you know, posting -- I
18 mean, we don't necessarily refer to them as hosting
19 capacity maps, but we are posting, for benefit of larger
20 transmission projects, you know, where there are
21 constrained areas on the grid and, you know, trying to
22 direct projects to areas where there's not constraints.

23 Q And when you talk about where there are
24 constrained areas on the grid, is that that -- is that

1 that map that has like counties shaded that show that
2 there's constraint or is it more granular than that?

3 A I think that's the map that we're -- I'm
4 referring to, yes.

5 Q Okay. So -- so there are large tracts, I don't
6 know, hundreds of square miles that -- that have been
7 identified as being resource constrained, and then other
8 areas that -- that are not?

9 A Correct.

10 Q Okay. What is your understanding of why the
11 renewable energy developers want the hosting capacity
12 maps to be made public?

13 A I -- I can't speak for the developers, I mean,
14 as to why they would want to see them published. I know
15 some of the developers, some of the, you know, the
16 feedback we've gotten is we should develop hosting
17 capacity for every single circuit in every single
18 location on the circuit, and that's something we just
19 struggle with how much benefit there would be when you
20 get down to trying to define hosting capacity by a -- a
21 distribution tap line. You know, how would that be used?

22 I mean, generally when you get down to, you
23 know, the smaller residential customer, I mean, they
24 don't have a choice as to where they're going to locate

1 on the grid. I mean, they're going to install likely,
2 you know, solar rooftop and, you know, I mean, they don't
3 have the flexibility to move elsewhere on the system if
4 -- if, you know, the ability to host at that particular
5 point is not -- not available.

6 And, you know, I think we also -- I think in
7 our testimony we've looked at the hosting capacity
8 concept and what's been done in at least a couple other
9 states, and it's a significant expense. Essentially what
10 you're doing to develop hosting capacities, you are doing
11 system impact studies for every single circuit and for
12 every single location on the circuit to determine, you
13 know, every location where you can host, and that's a,
14 you know, a tremendous effort and expense. And I'm not
15 sure at this point if -- if we were required to do that,
16 you know, how that would -- how that expense or cost
17 would be recovered.

18 A (Riggins) Can I also add?

19 Q Please.

20 A We also recognize that the information that
21 would be available in hosting capacity maps is already
22 readily available in pre-request and pre-application fee
23 reports, so customers request that, they pay for it.
24 Most importantly, the person who is going to benefit from

1 it pays for it, as opposed to all customers having to
2 cover that cost of developing those maps.

3 And I think the other challenge is deciding
4 what is capacity. We talk a lot about all the -- the
5 things that we look at in a system impact study and
6 capacity is one of those, but there are a number of other
7 variables. So to capture all of those variables in a map
8 that would make sense and be beneficial to customers,
9 combined with the cost of the developing it we think
10 makes it not reasonable.

11 Q Thank you for that clarification. When -- when
12 customers request that pre-application report, that's --
13 that's specific to a site that the customer identifies,
14 correct?

15 A That's correct.

16 Q So in asking for hosting capacity maps and --
17 and other tools to help identify favorable locations to
18 interconnect to the grid, do you understand -- would you
19 agree that the developer community is asking for
20 information from Duke to help the developer community
21 identify locations where it would be less disruptive and
22 require fewer upgrades in order to interconnect to the
23 grid?

24 MR. JIRAK: If I could just -- if we're being

1 asked questions about the development community's
2 advocacy in this proceeding for hosting capacity maps,
3 could you point us to the part of the testimony that
4 you're specifically referring to where they -- just so we
5 have some better context for this advocacy?

6 MS. HARROD: I'm sorry, Mr. Jirak. I don't
7 have anything in particular in mind. If the witness
8 doesn't agree with my -- the premise of my question, I'm
9 happy for them to tell me so.

10 MR. JIRAK: Just -- just to be clear, so we're
11 not looking at a particular piece of testimony that --
12 that took this position by development?

13 MS. HARROD: Not -- not at this moment, no.

14 MR. JIRAK: Okay.

15 MS. HARROD: Yeah. I think -- I think the --
16 the party that -- that advocated most strongly for that
17 was IREC, but I believe we've heard it from other
18 developer -- or from the -- from developers as well.

19 Q So let me -- let me -- let me restate the
20 question. And -- and as I said, if you don't agree with
21 the premise of the question, you feel free to say so. Do
22 -- do you understand the renewable developer community to
23 be asking Duke for more information about where it would
24 be less disruptive and less -- require fewer upgrades to

1 interconnect to the grid?

2 A (Riggins) I think the developer community is
3 obviously interested in learning more about where they
4 can locate generation facilities that would be least
5 disruptive, but I believe that there is a reasonable and
6 cost-effective way for them to get that information today
7 within the procedures and without incurring the cost of
8 modeling every circuit and every point on the circuit.

9 And I think we also pointed out that in
10 particular with IREC, if we're talking about small
11 customers, the ability to move their house, for instance,
12 to another location is somewhat limited, so, you know, it
13 seems more reasonable to us that a customer would ask for
14 that information for the point that they're interested
15 in, and that's a much less costly way to inform them
16 about the grid.

17 Q Okay.

18 A (Freeman) Let me also add, I mean, you know,
19 we've now been providing the queue report, posting it and
20 updating it every two weeks. We've been doing that now
21 for at least two years or more. And, you know, in that
22 report you can see, you know, the number of projects that
23 are connected to each circuit in each substation, and you
24 can see the number of projects that have been proposed,

1 and that provid--- and -- and these developers are
2 extremely sophisticated and use very technical
3 engineering consulting firms to support them. And I'm --
4 I feel pretty confident that they look at that -- that
5 queue report in detail, look and see, you know, and
6 determine whether or not additional projects can even be
7 remotely considered at a particular substation or a
8 particular circuit.

9 And even with all the information, I think we
10 even testified that we've got examples where there are a
11 number of projects proposed that -- that go way beyond
12 what I would consider the existing hosting capacity of a
13 particular substation or a particular circuit.

14 So again, I mean, there's a significant cost to
15 providing hosting capacity. We've done it where we felt
16 like it made sense. We've done it to support what we're
17 trying to do with large projects through CPRE where we
18 believe we can get, you know, economies of scale and get
19 the -- the best bang for the buck, if you will, in terms
20 of procuring solar. You know, we did that in that, you
21 know, respect to try and drive -- you know, direct, you
22 know, direct developers to areas of the grid or of the
23 transmission network where we don't see congestion. So I
24 think where it makes sense we've supported providing a

1 form of hosting capacity.

2 MS. HARROD: Mr. Chairman, if I could, I'd like
3 to pass out another exhibit, please.

4 CHAIRMAN FINLEY: Go right ahead.

5 MS. HARROD: While my colleague is passing
6 those around, let me ask a setup question. Hopefully
7 won't be too disruptive. I won't ask him about the
8 exhibit until you have it.

9 Q Mr. Freeman or anybody on the Panel, Duke is
10 currently engaged in examination of or -- or engaged in
11 planning and execution of upgrades and modifications to
12 its transmission and distribution grid, correct?

13 A I think correct. I mean, that's something that
14 we do on a regular basis, evaluate, you know, where we
15 need to invest in upgrading the grid, yes.

16 Q But isn't there right now a particular -- I
17 think it's gotten some different names, but isn't there a
18 particular process grid improvement plan that's being
19 studied and discussed?

20 A I'm -- when you ask that question, I think of
21 kind of multiple things. I mean, we've got the grid
22 improvement plan which we're not part of, but there's a
23 grid improvement plan that's being developed and -- and
24 proposed. And I'm not sure if you're referring to -- you

1 know, even my testimony I suggested that we've got, you
2 know, projects now that are triggering -- I think I used,
3 you know, example, one project where we're triggering,
4 you know, over \$100 million worth of upgrades. I'm not
5 really sure, you know, of those two examples which one
6 you're referring to.

7 Q Well, let's see.

8 MS. HARROD: May I approach, Mr. Chairman?

9 CHAIRMAN FINLEY: Go ahead.

10 MS. HARROD: Mr. Chairman, if we can mark the
11 exhibit that Ms. Townsend is passing out right now, the
12 -- which is the direct testimony of Robert M. Simpson
13 filed in Docket E-7, Sub 1146, if we could please mark
14 that as Attorney General Duke Cross Examination Panel
15 Exhibit 2.

16 CHAIRMAN FINLEY: It shall be so marked.

17 (Whereupon, Attorney General Duke
18 Panel Cross Examination Exhibit 2
19 was marked for identification.)

20 MS. HARROD: And then we also handed out some
21 selected pages from Kendal Bowman's testimony in E-100,
22 Sub 148. If we could just mark those, I believe it's
23 three pages, as Attorney General's Office Duke Panel
24 Cross Examination Exhibit Number 3.

1 CHAIRMAN FINLEY: We'll mark that Number 3.

2 MS. HARROD: Thank you.

3 (Whereupon, Attorney General Duke
4 Panel Cross Examination Exhibit 3 was
5 marked for identification.)

6 Q So -- so if we look Attorney General Cross Duke
7 Panel Cross Examination Exhibit Number 2, page 40, for
8 instance, Mr. Simpson testified in the Duke Energy
9 Carolinas rate case -- let's see -- actually wanted to --
10 he testified about -- about Duke's plan to modernize its
11 aging grid, did he not?

12 A Are you referring to page 40?

13 Q On page 40 right under -- right at line 12 and
14 13. He states, "The problems with our aging grid are
15 escalating and will worsen over time unless we take a
16 proactive approach."

17 A Yes. That's what he states, yes.

18 Q Okay. And if you -- if you flip back a couple
19 of pages to page 36, there's a chart there, and it -- it
20 shows planning beginning in 2017 for construction in
21 2018. Do you see that?

22 A Yes.

23 Q Okay. So in -- in light of Mr. Simpson's
24 testimony, is it -- is it accurate to say that -- that

1 Duke is in the middle of active planning and construction
2 on improvements to its transmission and distribution
3 grid?

4 A I can't -- I can't speak to, you know, this
5 particular plan, but I think in general we're always, you
6 know, making some level of improvements to the grid. I
7 mean, I did not participate, you know, in this -- in this
8 docket, did not participate in the development of the --
9 the grid improvement plan, so I'm -- I'm not sure how
10 many of your questions I can answer.

11 Q Understood. I'm not going to ask you detailed
12 questions about it. But let me ask you this, do -- do
13 you work with the people who are responsible for working
14 on the transmission and distribution grid such that
15 there's an understanding of where it's more efficient,
16 more cost effective to interconnect solar to the grid?

17 A We work with pretty much all the departments,
18 including the departments that put this plan together,
19 but I'm -- you need to ask your question again to really
20 understand what -- what you're asking.

21 Q Is there information within Duke Energy,
22 perhaps not in the DET department where you work, but is
23 there information within Duke Energy that would suggest
24 where it would be more efficient and require fewer

1 upgrades to interconnect to the grid?

2 A I mean, maybe my colleagues can -- can help me,
3 but in general we don't possess what I would call readily
4 informa--- readily available information on -- on where
5 you could connect to the grid, thus, you know, that's why
6 for an interconnection request we need to study that
7 particular location and the impact it has on -- on that
8 location. Even when we, you know, have a new customer,
9 new shopping center, new, you know, new industrial
10 customer, I mean, we've got to do a study to determine,
11 you know, whether or not we need to upgrade the grid at
12 that location to accommodate, you know, that particular
13 project.

14 Q Mr. Freeman, am I correct -- I'm testing my
15 memory here -- did you -- were you involved in the last
16 biannual avoided cost proceeding on behalf of Duke?

17 A Yes, I was.

18 Q Okay. So Attorney General Cross Examination 3
19 is some pages out of direct testimony that were -- that
20 was filed by Kendal Bowman on behalf of Duke Energy. Do
21 you see that?

22 A Yes.

23 Q And the first page that I wanted to draw your
24 attention to on -- on page 15 she comments that --

1 A I'm sorry. Page?

2 Q Well, it's --

3 A Okay. I got it.

4 Q -- it's -- it's the second page of the exhibit,
5 but it's page 15 of her -- of her prefiled testimony.

6 A Okay.

7 Q Where -- it's the paragraph numbered 1 there.
8 Do you see where it says she -- she comments on PURPA's
9 role in the recent surging and uncontrolled growth of
10 utility-scale solar. Do you see that?

11 A Yes.

12 Q So the Company's response to the -- to what it
13 saw as the uncontrolled growth of -- of utility-scale
14 solar is summarized on that last page of Ms. Bowman's
15 testimony, page 61, that's also there. Do you see that
16 question and answer that's on that page?

17 A I -- I do. I have not read it, but --

18 Q Let me give you a minute to read it, by all
19 means.

20 A Okay. (Reviewing document.) Okay.

21 Q Okay. So am I correct that Ms. Bowman is
22 describing -- in that paragraph she's describing Duke's
23 proposal for a -- a competitive -- for what's essentially
24 become the CPRE program?

1 A Yes.

2 Q Okay. And about midway through the paragraph
3 do you see where she says "In addition, the Companies
4 envision a process that allows DEC and DEP to plan where
5 the new solar generation is located"?

6 A I see that, yes.

7 Q Okay. And -- and then skipping to the end of
8 that sentence, she says that it would be done "in a
9 thoughtful and managed process overseen by an independent
10 third party." Do you see that?

11 A Yes.

12 Q So that suggests that the Companies do have
13 some -- some locations where they would prefer to have
14 solar located; is that correct?

15 A I would -- no, I don't believe that's exactly
16 what she is suggesting. You know, the CPRE process, like
17 I, you know, described earlier, is an evaluation process
18 to look at, you know, a number of proposed projects
19 through a competitive procurement process where we not
20 only look at the -- the -- the bid price of the project,
21 we also would evaluate the locations of those projects
22 through, you know, our typical system impact study
23 process to determine which projects from a total cost
24 perspective between upgrade cost and, you know, bid cost

1 make sense.

2 So it is a, you know, kind of more of a planned
3 process, but, again, the idea is to locate projects where
4 we determine that it's beneficial to connect that
5 project. And thus, you know, we've even tried in CPRE to
6 provide, you know, kind of initial, you know, input as to
7 where it made sense, and that, thus, the -- the maps that
8 we have provided to provide, you know, some additional,
9 you know, guidance, but I think we also clarified that
10 that -- that that doesn't necessarily, you know, mean for
11 certain that a project can't locate in -- in that area or
12 doesn't mean for certain that a project that's not in
13 that area is not going to require upgrades. It's kind of
14 indicative kind of guidance for project proposals.

15 Q So if I'm understanding you correctly -- and
16 I'm by no means trying to put words in your mouth, so if
17 I don't have this right, please correct me -- but if --
18 if I'm understanding you correctly, as you sit here
19 today, Duke doesn't have a plan for where it would like
20 to see solar energy -- distributed solar energy added to
21 the grid?

22 A Well, I would -- you said DEC or DEP?

23 Q I think I said Duke.

24 A Okay. Duke. Yeah.

1 Q That's -- that's -- and you're free to --

2 A Well, I think yes, I mean, we do have a plan.
3 I mean, the plan is to, you know, move away from, you
4 know, kind of this, I'll call it -- I think we -- I think
5 Ms. Bowman used the -- the term "uncontrolled," but our
6 plan is to move to a more managed and controlled process,
7 again, to identify locations where we can accommodate
8 projects with minimal upgrade cost. So that's the plan,
9 is to move, you know, is to essentially, you know -- I
10 mean, if you look at what we've got today, I mean, I
11 think I say this in my testimony, that at least in DEP
12 the majority of the projects that have been proposed
13 today have been proposed in the southeastern part of the
14 -- the system and there's a tremendous amount there, but
15 there's been a lot less projects proposed, say, in the
16 northwest or northeast part of the system. So we're
17 encouraging projects to locate in those areas and
18 minimize, you know, upgrade cost or, you know, or at
19 least, you know -- I mean, if you think about generation,
20 think about load, the ideal would be to kind of, you
21 know, I mean distributed energy resources. The word
22 distributed is there for a reason. It's to distribute
23 that -- those generators across the entire system.

24 Q In your -- in your testimony, I'm looking at

1 page 20 and 21, you talk about a specific upgrade to the
2 transmission lines that need to be reconductored.

3 A Yes. I'm familiar with that.

4 Q And in your testimony at the time it was filed,
5 you indicated that -- that you -- that Duke was still in
6 -- in talks with the relevant parties about those
7 upgrades; is that correct?

8 A That is correct, yes.

9 Q So as I -- I can't -- I don't see the exact
10 reference, but as I recall, the -- the upgrades are about
11 20 million -- sorry -- \$200 million in cost; is that
12 right?

13 A That is correct.

14 Q And so are the parties at the table discussing
15 their willingness to -- is -- is that being actively
16 discussed, that the parties may be willing to -- to
17 invest that much in order to interconnect?

18 A Yes.

19 Q So given that there are other parties who are
20 willing to invest their own capital to modernize the
21 transmission and electric grid in North Carolina, are
22 there synergies that are available to allow those -- to
23 allow the current planning process that Duke is
24 undergoing with respect to the transmission and

1 distribution grid, to allow those investments to be made
2 in a way that -- that overall lowers cost to ratepayers?

3 A Ask your question again. I'm sorry.

4 Q Sure. It was a long question. So there are
5 parties who are apparently willing to invest in the
6 aggregate \$200 million to upgrade a transmission line for
7 -- for -- in Duke's grid in order to interconnect energy
8 to the grid, correct?

9 A That is correct.

10 Q And Duke is currently engaged in a process of
11 -- of planning for modernizing and strengthening its
12 transmission and distribution system, correct?

13 A Well, if you're -- again, if you're referring
14 to the grid modernization plan that, again, I have not
15 been, you know, actively involved in that, that's a
16 separate, you know, separate process from this particular
17 project that I identified in my testimony.

18 Q Well, that's exactly -- that's exactly the
19 question. Do those need to be separate processes?
20 Aren't there -- aren't there opportunities for synergy
21 for those investments to be made in a way that will
22 maximize the use of those investments and, therefore,
23 benefit ratepayers by causing the grid to be modernized
24 and made more reliable on somebody else's dime?

1 A Well, I -- I don't know how far to go into the
2 -- this particular project and how it's -- how it's
3 ultimately funded because we're still in, you know, I
4 guess, contract negotiations with -- with this particular
5 developer. But, you know, this is a FERC jurisdictional
6 project, and under the FERC, you know, procedures the
7 developer will in -- in this particular case would --
8 would fund the upgrades, then under FERC, once the
9 upgrades are completed and once the interconnecting
10 customer is online and operating, the Utility is required
11 to refund those upgrades. So that's kind of the process
12 that this particular upgrade is going to ultimately be
13 funded.

14 So once the refund is made, then the portion
15 that's -- that's, you know, applicable to our retail
16 customers would -- would be -- I mean, we would request
17 from the Commission, I assume, that we include that
18 refund or that cost in rate base, and then it is, you
19 know, shared among all customers, then a portion of that
20 is -- is recovery through wholesale customers in the
21 OATT.

22 And maybe the other comment to make, and I
23 think this is in my testimony as well, once those
24 upgrades are made, it will allow at least another

1 thousand MW worth of solar projects that are located kind
2 of in that general area to interconnect to the grid as
3 well. So -- so that particular upgrade will benefit, you
4 know, interconnection or generating customers.

5 I'm not sure if I'm answering your question or
6 not. It was a long, complicated question.

7 Q That was an interesting answer.

8 MS. HARROD: I have no further questions.

9 CHAIRMAN FINLEY: Public Staff?

10 MR. DODGE: Thank you, Chairman.

11 CROSS EXAMINATION BY MR. DODGE:

12 Q Good morning, gentlemen. I'm Tim Dodge with
13 the Public Staff. My first series of questions are
14 generally directed at -- at Mr. Freeman's testimony. Mr.
15 Freeman, on -- on page 5 to 7 of your direct testimony
16 you talk about -- I'll give you a moment to flip to it if
17 you'd like.

18 A (Freeman) Five to 7?

19 Q Yes.

20 A Okay.

21 Q So in this area you talk about -- this portion
22 of your testimony you're -- you're discussing generally
23 the dual role of the Utility in managing the
24 interconnection process which you describe as continuing

1 to allow interconnection customers to interconnect in a
2 nondiscriminatory fashion, but also ensuring the
3 continued safe, reliable operation of the grid. So --
4 sorry. Go ahead.

5 A No. I agree. Yes.

6 Q Okay. So how do you -- how does -- how do you
7 approach that role of balancing those interests, allowing
8 interconnection in a nondiscriminatory fashion while
9 ensuring the safe, reliable operation of the grid?

10 A A couple thoughts. I mean, one, you know, I --
11 I can't remember if I used the word allow, but, again,
12 you know, we are required to support the interconnection,
13 you know, request. And the balancing part comes from,
14 you know, the studies that we do and, you know, the --
15 the studies are a critical part of, you know, kind of
16 creating that, I'll call it, balance.

17 You know, on one side of the -- the balance
18 scale, if you will, is we've got the obligation to
19 support the interconnection, and on the other side of the
20 -- the balance or the scale we've got the obligation to
21 ensure, you know, reliable service to all of our
22 customers, and it's done, again, through -- through the
23 study process and through kind of our ongoing, you know,
24 learning as we go.

1 Q Okay. Thank you. And you used the term
2 "unparalleled" several times in your testimony to
3 describe the volume of interconnection customers that the
4 Duke systems have experienced. Over the past five years,
5 for example, I know you were mentioning earlier in 2012
6 the -- the limited amount of activity and now where we're
7 at currently, has Duke's processing of interconnection
8 requests been able to keep up with the number of
9 requests, new requests, submitted?

10 A I think in general, yes. You know if you look
11 at your small interconnection customer, your under 20 kW,
12 I mean, absolutely, we keep up with -- with those
13 requests. Even the middle size projects I think we've
14 testified that we generally keep up with those projects.
15 You know, the large projects, I think, you know, we, you
16 know, tried through the 2015 interconnection procedures
17 to, you know, create this -- we didn't try; we did create
18 this, you know, concept of Projects As and Bs and on-
19 holds, and in general we're studying and moving the As
20 and the Bs along as efficiently, as effectively as we
21 can. The on-hold projects I think we've testified that,
22 you know, that those projects, in some cases it takes
23 years before we get to that particular project.

24 Q So -- so when we talk about the -- the growth

1 and the -- the backlog in the interconnection queue, are
2 you stating that much of that backlog are those
3 interdependent projects? Not -- not the -- the net
4 metered or the fast track type proposals. Those are not
5 experiencing the delays that -- the extended delays?

6 A That's correct.

7 Q You talked -- you made a few references, just a
8 few moments ago you did, about the Carolinas being kind
9 of a living lab and that the Utility is continuing to
10 evolve its practices over time. Should -- if you're an
11 interconnection customer and you've submitted an
12 interconnection request, wouldn't it be ideal to know
13 what the -- the rules that are going to apply to that
14 project or the screens or the -- the standards that would
15 apply to the project at that -- at the time you submit
16 the interconnection request?

17 A Yeah. I think that's a -- a fair conclusion,
18 that it would be ideal that, you know, you would know
19 exactly what, you know, the policies and -- and standards
20 would be. But again, I, you know, continue to reinforce
21 the living lab, and we've learned a lot as we go. You
22 know, one of the things that has not come up that was,
23 you know, a tremendous living lab experience for us, and
24 I think it came up yesterday when we talked about the

1 CSR, circuit systems review, and we talked a little bit
2 about Campbell Soup. But, you know, just looking at the
3 -- the facilities that are being connected up to this
4 system, and we've learned a lot about construction
5 quality and -- and things like that.

6 So there's another example there where we kind
7 of lived and learned and implemented, you know, an
8 inspection and Commission process, and I think the
9 Commission has, at least in one case, been briefed by
10 Advanced Energy on some of what we found there, and I
11 think we're all learning from that experience.
12 Developers as well. I mean, we're seeing a -- a
13 significant improvement trend in the projects that are
14 getting connected up to the system.

15 Q So for those projects that are interdependent,
16 have entered the queue, submitted their interconnection
17 request, and they are waiting on those Project As and Bs
18 in front of them to move, if the Utility were to identify
19 through its kind of evolving good utility practice some
20 other standard or change in how it applies a screen,
21 should those projects that have submitted that
22 interconnection request, but haven't made it to the
23 system impact study phase, be subject to those new
24 screens or standards?

1 A I think we -- we've taken the position yes,
2 that if a particular project has not reached a certain
3 point in the process, either as an executed
4 Interconnection Agreement, which is a contractual
5 obligation, you know, on both parties, but depending on
6 where the project is in the process, you know, we've
7 taken the position that no, if -- if you're a project on
8 hold and we determine through kind of the living lab that
9 we need to make an additional change, we would intend to,
10 you know, make that change requirement on that on-hold
11 project.

12 Q And -- excuse me -- I think that --

13 A And I think we've even got testimony that
14 that's not that much different than, you know,
15 municipalities and others, you know, making zoning
16 changes and other things and -- that -- that impact, you
17 know, a -- you know, a subdivision developer or -- you
18 know, so it's not really that much different than I think
19 what you would see, you know, pretty much in any -- any
20 particular venue.

21 Q If over the past several years through the
22 Method of Service Guidelines and some of these other
23 changes that the Utility has implemented -- excuse me --
24 such as the Method of Service Guidelines or -- or some of

1 the changes to the screens, if the Utility hadn't made
2 those changes to its good utility practice, would current
3 retail customers or future retail customers have
4 potentially experienced degradations in service quality?

5 A I think that would be our position. You know,
6 you don't -- you don't know for sure if you were to -- to
7 kind of retract all of those, you know, provisions, you
8 know, what the, you know, results would be, but our
9 expectation is yes. I mean, we feel like those screens
10 and policies were necessary to ensure power quality and
11 reliable service. And I think, you know, we feel like
12 our obligation is not to, you know, wait until we have,
13 you know, power quality issues and then implement a new
14 policy. I think our obligation is to ensure on the -- on
15 the very front end that, you know, we're not impacting
16 other customers.

17 A (Gajda) Can I add to that one briefly?

18 Q Sure. Yeah.

19 A Yeah. And I just want to mention, I -- I
20 believe we submitted in, again, in testimony or data
21 requests that -- that we've actually documented a -- a
22 case, and I have to give credit to another engineer who
23 works for our consulting -- one of our consultants who
24 actually wrote a paper around this, and I believe we've

1 provided that, and it really documented how we did an
2 interconnection study, and this was prior to us having
3 anything like the Method of Service Guidelines.

4 And -- and only two to three years after the
5 interconnection took place in which we made some changes
6 to the circuit, we had a change in retail load patterns,
7 and the only way we could maintain the interconnection to
8 the generator and accommodate the retail load customer
9 was to make a change to the circuit. I think it was
10 about a -- I think it was about a mile of line that we
11 had to build that we would have not really had to have
12 built at all had the interconnection really been done
13 differently or -- or, you know, more in conjunction with
14 how the method -- Method of Service Guidelines are -- are
15 currently written.

16 So in that case, we ended up really seeing
17 costs put on to -- to ratepayers in that particular case
18 and -- and that is -- that's the exact kind of scenario
19 that we would expect to see increase without having a --
20 those types of guidelines in place. Essentially we -- we
21 view those guidelines as -- as part of system planning in
22 a sense. Without a plan you don't have a plan, so...

23 Q Thank you. So I'm going to move forward a
24 little bit in your testimony to page 15, Mr. Freeman.

1 And I'll let you flip there.

2 A (Freeman) Okay.

3 Q So in this section of your -- you describe or
4 discuss that there are functional limits to the amount of
5 generating capacity that can be added to a distribution
6 system without it changing the nature of that
7 distribution system itself. Does that characterize your
8 -- your discussion on page 15?

9 A I think that's what I'm saying, yes.

10 Q Okay. So thinking about those limits, where
11 those functional limits are, I'm going to just jump
12 around. Just, please, correct me if I misstate some of
13 the numbers you refer to in your testimony. But on page
14 10 you describe that there are -- there were
15 approximately 2,600 MW interconnected in -- as of
16 November 2018, but then yesterday I think you informed us
17 that Duke was able to complete an additional 543 MW in
18 2018.

19 A Yeah. I think what I said was 537 --

20 Q Oh, 537.

21 A -- and I think the 2,647 is now over 2,900 MW.

22 Q All right. And then on page 14 of your
23 testimony you indicate that the legacy PURPA projects and
24 House 5 -- House Bill 589 procurement will bring a total

1 of approximately 7,000 MW of solar under the Company's
2 system. I think that's on page 14.

3 A Correct.

4 Q All right. Then on page 27, jumping towards
5 the back you describe the -- the queue for solar
6 generation in the Carolinas for the -- the two companies
7 as over 14,000 MW.

8 A Correct.

9 Q So does -- does this number, that 14,000 MW,
10 have anything to do with your -- your pending retirement?

11 (Laughter.)

12 A You want to know the truth? Do I have to
13 answer that question?

14 (Laughter.)

15 Q So -- but back to that number, that 14,000 in
16 this discussion of functional limits on the grid, you
17 know, before you start having to make substantial
18 changes, I know, again, that much of this, especially at
19 the distribution level, is location specific, but to the
20 extent upgrades are needed on the transmission and
21 distribution level to accommodate future
22 interconnections, how will those -- the cost of those
23 upgrades be borne?

24 A Well, I mean, in -- in general, we will

1 continue to follow the same process that we do today.
2 We'll look at, you know, kind of that next
3 interconnecting customer, and if they are triggering the
4 need for upgrades, those upgrades will be required to be
5 paid by that individual interconnecting customer.

6 Q So I'm -- I'm going to talk a little bit about
7 right-of-ways, utility right-of-ways. I'm going to go to
8 page 15. You have a -- a discussion there. Why don't
9 you turn to page 15. In that section you describe that
10 these right-of-ways were generally established to bring
11 electricity from the Company's generating facilities to
12 its customers. So who bore the cost to acquire and
13 establish those right-of-ways?

14 A In general, our retail customers.

15 Q And when the Utility brings, or allows, I
16 should say -- when the Utility allows a distributed
17 generator to use existing capacity on a right-of-way to
18 accommodate its interconnection, does the interconnection
19 customer, if there is sufficient capacity, pay for the
20 use of that existing right-of-way?

21 A No.

22 Q But on page 17 you state that available
23 capacity in right-of-ways, if that, again, it was
24 originally paid for by retail customers, is used for a

1 distributed generator, it's then reduced for future load
2 growth as well, correct?

3 A That is correct, yes.

4 Q And that --

5 A Potentially. I mean --

6 Q Potentially?

7 A -- load -- yeah. Load and generation
8 potentially have, you know, different impacts on -- on
9 that particular circuit.

10 Q And you also indicate that the ability to
11 transfer load to another feed may also be limited as a
12 result of that capacity being used by a distributed
13 generation?

14 A That's correct.

15 Q Okay. All right. So now I want to discuss
16 briefly the -- the large transmission network upgrade
17 project that Ms. Harrod was just speaking with you about
18 as well.

19 You -- you start this discussion on page 19 of
20 your testimony. Generally thinking about the time frame
21 for that project, when was the -- this issue, this large
22 transmission network upgrade identified, first
23 identified, the need for it?

24 A I -- I think -- I can't remember if we've got

1 it in our testimony. I think it was roughly two years
2 ago that we first performed -- I can't remember if it was
3 two years ago that that particular interconnection
4 request came in or if it was like one to two years ago
5 when we completed the system impact study and provided,
6 you know, the -- that report to the developer. I don't
7 have those exact numbers. But the upgrade requirements
8 were communicated to that particular project probably at
9 least -- at least a year ago.

10 Q And, again, this is a FERC jurisdictional
11 interconnect, the -- the large project or two projects
12 that we may be referring to. So on page 33 at the tail
13 end of your testimony, you describe some of the
14 differences between FERC jurisdictional and state
15 jurisdictional interconnects?

16 A Correct.

17 Q And so for this project it would -- you
18 indicate that the interdependency provisions of the state
19 serial queue do not apply to a FERC project; is that
20 correct?

21 A Generally, that's correct. I mean, we're
22 required to study a FERC -- you know, FERC projects in
23 queue order, similar to what we do with state projects,
24 but for FERC jurisdictional projects we did -- we do not

1 have, you know, the ability to identify it as an A or a B
2 or on hold.

3 Q So -- but back to the state level
4 interconnections that are -- they would be viewed as
5 interdependent on this project moving forward?

6 A Yes.

7 Q Does the Utility at this time inform
8 applicants, interconnection customers seeking to
9 interconnect in that impacted area, of the
10 interdependency and the potential delay associated with
11 this project?

12 A Yes. We've had, gosh, at least -- at least one
13 meeting with, you know, developers, stakeholders to
14 identify, you know, the projects that are impacted by
15 this particular needed upgrade. I think we've provided,
16 you know, that list to all developers. And, again,
17 there's roughly a hundred projects or so that are
18 impacted by this particular need for an upgrade.

19 Q How about a new project? If someone submitted
20 a pre-application request, for example, in that area,
21 would they be alerted to this potential delay that might
22 result?

23 A I'll let my --

24 A (Riggins) Yeah. You know, as part of our

1 attempt to be more transparent and provide more
2 information to developers, we would indicate when we have
3 known constraints that we know about. Again, it's what
4 we know, provide that in as timely a manner as we can.
5 So if we have that information readily available and --
6 and can put it in a pre-app, then we would.

7 Q All right. And based on the description of the
8 -- the feeders that are impacted by this project that
9 were -- this is a fairly large area that is impacted by
10 this transmission network upgrade?

11 A (Freeman) Correct.

12 CHAIRMAN FINLEY: Mr. Dodge, if it's all right
13 with you, we're going to take a morning recess.

14 MR. DODGE: Okay. Thank you, Chairman.

15 CHAIRMAN FINLEY: All right. We'll come back
16 at 11:15 -- 11:15.

17 (Recess taken from 11:01 a.m. to 11:15 a.m.)

18 CHAIRMAN FINLEY: All right. Mr. Dodge?

19 MR. DODGE: All right. Thank you, Mr.
20 Chairman.

21 CONTINUED CROSS EXAMINATION BY MR. DODGE:

22 Q So back to Mr. Freeman for just a couple more
23 here. So Mr. Freeman, we were discussing the -- the
24 large transmission project in southeast North Carolina

1 that you discuss in -- in your testimony. And you had
2 the discussion with Ms. Harrod about this and, again, you
3 indicated the upgrades -- the total cost of the upgrades
4 is approximately \$200 million, correct?

5 A (Freeman) That's correct.

6 Q And, again, this is to -- to allow the
7 interconnection of these distributed generation
8 facilities, not for other load growth or other purposes?

9 A That is correct, yes.

10 Q And also you discussed with Ms. Harrod the --
11 the full repayment of the interconnection customer -- the
12 interconnection customer is refunded their -- their
13 contributions or their payments for the -- the cost of
14 those upgrades, correct?

15 A That's correct. Under the FERC process, yes,
16 they are fully refunded, and then those costs are -- are
17 borne by our retail customers, yes.

18 Q And do those -- does the Company also pay
19 interest on those payments?

20 A Yes, we do. We -- we pay interest at the FERC
21 interest rate.

22 Q Do you know what that FERC interest rate is on
23 those payments?

24 A I think it -- it's a variable rate. Last

1 number I heard, subject to check, is like 4.9 percent.

2 Q And over how -- how long is this project
3 anticipated to take for construction before the repayment
4 would commence?

5 A I mean, we're hoping to have the project and
6 construction cost completed by the end of 2020 -- 2022.
7 I'm sorry. 2022.

8 Q Okay. Thank you. I'll move on to some
9 questions for Mr. Gajda, although, of course, feel free,
10 any of you, to -- to join in if you feel it's appropriate
11 to respond.

12 Mr. Gajda, you talked a little bit on page 31
13 in your direct testimony about the Utility's process of
14 continually evaluating its fast track and supplemental
15 review screens. If -- if the fast track and supplemental
16 review screens were fully prescribed in the
17 interconnection procedures, wouldn't that be more
18 transparent for the interconnection customers, to be able
19 to go directly to that document and see how those screens
20 are applied or defined?

21 A (Gajda) Well, yes, perhaps it would. The fast
22 track screens are, of course -- are laid out in the
23 standards. We -- we had talked about the supplemental
24 review not being expressly defined in the interconnection

1 standards, so if there were analyses, and I would call
2 them analyses rather than screens in the supplemental
3 review just because I think once we're beyond, say,
4 failing a screen in fast track, we -- the concept of
5 supplemental review is a review. Review, in the
6 engineering sense, is a -- is a time at which you can
7 review the impact of something, which is more like an
8 analysis. So if the steps in there were -- were within
9 the standards or provided in some other document, that --
10 that would provide some transparency.

11 Q So if -- if the Utility is making these --
12 these modifications or evolving its practice with the --
13 the supplemental review analyses, for example, how would
14 an interconnection customer become aware of those
15 changes?

16 A Well, so, you know, current--- currently, our
17 goal is to just move them expeditiously through the
18 process and the -- because we don't -- we don't
19 necessarily generate a system impact study report. The
20 -- those analyses that are done within the supplemental
21 review aren't -- you know, there -- there's not a place
22 in the standards laid out currently for us to express
23 those, communicate those. I doubt that if we were asked
24 about them that we would not share those, so -- on a

1 project-by-project basis.

2 So if -- if we were -- if we were kind of more
3 in a scenario where those analyses were -- that, you
4 know, if we were going to make those available with every
5 project, let's say, then, you know, there'd be a little
6 bit of additional time in documenting those externally to
7 -- to, you know, some customer, whether that was -- if
8 that became part of a report, that would certainly
9 increase the time. If it was more of a kind of a
10 scenario of -- of saying, well, we have a -- here are the
11 -- a number of things that we may evaluate, and depending
12 on the complexity of the project, you know, we may
13 evaluate, say, a subset of these and, you know -- again,
14 that's not currently set out for in the standards --

15 Q Sure.

16 A -- but I could envision a process like that.

17 Q So I think yesterday you described those
18 supplemental review analyses like as a menu of options
19 that the engineer may select from.

20 A That's correct.

21 Q So there are other guidelines or documents the
22 Utilities rely on in the interconnection process that
23 aren't part of the interconnection procedures, like the
24 Method of Service Guidelines, for example, correct?

1 A Yes.

2 Q And were those made available to customers?

3 A The Method of Service Guidelines themselves are
4 -- are posted externally on our website. And -- and, you
5 know, the -- another document I can think of is our
6 Service Requirements Manual. We call it "the white book"
7 for slang. And it's also posted externally. It -- it
8 has a number of basic requirements that an
9 interconnection customer or installer might find useful
10 or be interested in. So anything like that to date we
11 have posted externally on our -- on our website.

12 Q Could that menu of options for the supplemental
13 review screens be similarly made available on the
14 Utility's website?

15 A I don't see anything, you know, significantly
16 structurally wrong with that. I think the only thing we
17 would have to be very careful of, just like any -- any
18 other technical analysis, you know, provision would be
19 that there's an understanding that this is the menu that
20 we're using today, and as we evolve and learn, we -- we
21 may find that particular items are no longer necessary or
22 we may find that other items are potentially necessary.

23 And -- and the only challenge in implementing
24 that I think primarily is that when we find that

1 something else perhaps is necessary, we may find that
2 with a particular project and -- and not yet have that
3 posted on the website because we discovered that in the
4 process of going through that project. So that would
5 just be a normal part of the, I think, the living
6 laboratory, but the -- of the way that that would occur,
7 but, again, that would be just kind of a transition
8 state, I think. So in general, it -- it would require
9 just management of that menu of options, if that's
10 helpful.

11 Q Thank you. Excuse me. In your rebuttal
12 testimony on -- on page 34, you indicate that you don't
13 believe that the overall fast track and supplemental
14 review processes need to be reviewed at this time. Do
15 you have that page in front you there, page 34?

16 A I have the page, yes.

17 Q Okay. So yesterday, however, it sounded like
18 you indicated the Utilities may be open to taking another
19 look at those screens. For example, I think you
20 indicated potentially taking a look at how the Utility
21 applied Section 3.2.1.2. Do you recall that discussion
22 yesterday?

23 A Yes, I do. Yes.

24 Q Okay. And as part of the Stipulation that was

1 entered into between the Public Staff, Duke, Dominion,
2 and the Pork Council, Duke agreed to consult with EPRI in
3 the first quarter of 2019 on its fast track and
4 supplemental review process, correct?

5 A Yes. That's correct.

6 Q And then this process would be brought back to
7 the Technical Standards Review Group or the -- the
8 results of that consultation would be brought back?

9 A Yes. I believe that's correct. That's right.

10 Q All right. Thank you, Mr. Gajda.

11 A Yes.

12 Q Mr. Riggins, just a couple questions for you as
13 well. On page 12 of your testimony you have a table,
14 again, that refers to the increase in resources, staffing
15 resources, that the Company has experienced since 2015.
16 And, again, you indicate that the -- that those numbers
17 indicate you have more than tripled the personnel working
18 on interconnection. I believe the -- the numbers in 2015
19 were about 37 and it's now over 120 combined in those --
20 those different categories; is that correct?

21 A (Riggins) I'm not sure if they're right. I
22 haven't added them all up, but --

23 Q Yeah. Roughly.

24 A -- just over a hundred I think is what we have

1 in testimony.

2 Q Okay. And is the Utility still adding
3 resources for interconnection purposes at this time?

4 A We continue to evaluate on a regular basis the
5 need for resources based on the requests that we have,
6 the backlog that we have, and continually monitor that.
7 So, yes, we -- I think we even have a position posted as
8 we speak.

9 Q And is the Utility also continuing to evaluate
10 its process for assigning the cost associated with
11 interconnection to the interconnection customer?

12 A We'll continue to monitor the cost that we
13 incur, and also monitor the volumes that we forecast and
14 -- and continually try to monitor that and would be
15 willing to submit reports if we need to, to support that
16 and adjust fees, if necessary.

17 Q Okay. Thank you. Now, on page 33 you indicate
18 that the grid -- as the grid continues to become more
19 saturated as more customers seek to interconnect or
20 continue to interconnect, those customers are going to be
21 -- have to choose between either higher costs or reduced
22 capacity, or that's already occurring, and that that's
23 resulting in increased disputes. Do you see that
24 discussion in your testimony?

1 A I do.

2 Q So do you anticipate that that increase in
3 disputes is going to continue over time, that you will
4 likely see more disputes between the Utility and
5 interconnection customers?

6 A I think you could make that judgment. My hope
7 would be that we continue to work on improving
8 communications with customers, being more transparent.
9 And even in the end if there ends up being higher cost
10 through better communications, I would hope we could
11 avoid the disputes that we're encountering right now. So
12 I don't know necessarily that higher cost will always
13 drive more disputes.

14 Q Maybe one example just to close on real quick,
15 and this may be -- Mr. Gajda may be more familiar with
16 this, the -- the commissioning process that was
17 implemented in the fall of 2017, that -- did that result
18 in some informal disputes between the parties -- between
19 interconnection customers and the Utility?

20 A (Gajda) I'll admit I'm not a hundred percent
21 sure if it -- you -- you may have direct knowledge on
22 that -- I'm -- if it resulted in a physical dispute from
23 -- in regards to the commissioning and inspection
24 process, yeah.

1 Q I -- I think to the extent the Public Staff
2 becomes involved, typically, that's at the -- the
3 informal dispute level, yes.

4 A Okay. Yes. That's correct. Yes. Now, from
5 an informal dispute perspective, yes, I do recall there
6 was some of that, yes.

7 Q And in that context the Utility made some
8 changes to its commissioning process that resulted in
9 resolution of some of the -- the issues that were raised
10 at that time, did it not?

11 A That's correct.

12 Q Okay. And so that -- in that case the -- the
13 Utility -- with the commissioning process there was some
14 flexibility provided that allowed the Utility to adjust
15 the -- the timeline for those commissioning studies in a
16 way that addressed the issues raised in the dispute
17 process?

18 A Yes. I think so, yes. The -- yeah. The --
19 the issue of a -- of a -- of getting facilities online by
20 the end of the year, which is always an issue due to tax
21 credit implications, you know, we -- yeah, we did. We
22 challenged ourselves, and Advanced Energy did a great job
23 in -- in really trying to adapt to that situation, yes.

24 Q All right.

1 MR. DODGE: Thank you.

2 CHAIRMAN FINLEY: Redirect?

3 MR. JIRAK: Thank you, Chairman.

4 REDIRECT EXAMINATION BY MR. JIRAK:

5 Q Mr. Riggins, I'll begin with a few redirect
6 questions for you. Counsel for IREC yesterday asked you
7 a number of questions regarding the particular
8 interconnection details that the Company makes available
9 to the public. Do you recall those questions?

10 A (Riggins) Yes, I do.

11 Q Okay. Can you briefly explain the general
12 considerations that drive or inform the Company's
13 decisions related to interconnection related to
14 reporting?

15 A Sure. At a minimum we look at what are we
16 required to do to be compliant with reporting
17 requirements, but over and above that we're, again,
18 looking for every opportunity to be more transparent,
19 constantly looking for tradeoff between the benefits of
20 providing information versus the cost of delivering that.

21 You know, certainly we could deliver
22 information, any level of information, at some cost, but
23 we try to balance that, and also recognize the hundreds
24 of interconnection requests before us. There is some

1 point where we believe it becomes at least
2 administratively challenging to do a lot of additional
3 reporting.

4 We mentioned that our customer portal is going
5 to be implemented in 2019. We believe that that's going
6 to benefit customers to a great degree and might reduce
7 the interest in additional reporting that's been
8 requested.

9 And I would also just mention that we have
10 improved a lot around customer communications. I
11 mentioned yesterday -- I actually mentioned the wrong
12 date when I said we did a customer experience workshop in
13 2017. It was July of 2018. And we've implemented a
14 number of improvements in response to that to try to
15 provide more information.

16 Q And Mr. Riggins --

17 A (Freeman) I want to clarify one thing. You
18 know, on the customer portal I think we've either stated
19 publicly or we're now expected to bring that online now
20 in March, so it's not like it's at the end of the year.
21 That will be very soon. And that will open up or expose
22 pretty much all the details in Salesforce to that
23 particular customer because we feel like that's a -- kind
24 of a huge benefit for the individual customer and will be

1 available very soon.

2 Q Thank you. Mr. Riggins, doesn't Duke already
3 provide significant detailed public key reporting on its
4 website today, and that's available to the public?

5 A (Riggins) We do. Again, voluntarily we publish
6 a biweekly updated report on our website. The example in
7 my rebuttal testimony in Exhibit 1 shows an example of
8 what that report looks like. I'd also mention that it
9 tells a lot about the information there, so operational
10 status, interdependency status, and even a new field that
11 we've offered up just in the last couple of months called
12 an engineering administrative designation, which
13 sometimes customers complained that there was not a lot
14 of information available about where within system impact
15 study they are, so this EAD, we call it, gives you an
16 idea of where within the system impact study process is,
17 so just an additional level of granularity.

18 Q And in this particular proceeding has Duke
19 agreed to Public Staff's additional reporting
20 recommendations?

21 A We have.

22 Q Okay. And is that going to provide additional
23 information for interconnection customers? Will these --
24 these additional reporting recommendations will provide

1 further transparency into the -- into the interconnection
2 status and queue issues?

3 A It will expand on, I think, the quarterly
4 reports that we provide today, is what the Public Staff
5 had asked for.

6 Q Thank you. I have a few questions for Mr.
7 Freeman. Mr. Freeman, yesterday you were asked some
8 questions by counsel for NCSEA regarding mitigation
9 options, extension, and cure periods. Do you recall
10 those questions?

11 A (Freeman) Yes, I do.

12 Q And the questions centered largely on the fact
13 that those -- those particular parts of the
14 interconnection process are not currently identified in
15 the Company's redline modifications in North Carolina
16 procedures. Do you recall that line of questioning?

17 A I do, yes.

18 Q Now, to be clear, all of those factors,
19 mitigation options, cure periods, extensions, those are
20 all parts of the current process that benefit particular
21 developers that receive those, correct?

22 A Oh, that is absolutely correct, yes.

23 Q So -- so how do mitigation options benefit the
24 developers that are receiving them?

1 A The mitigation option, I mean, essentially
2 provides to the customer, you know, multiple options to
3 support their interconnection. Typically, it's a
4 downsized option for their facility that -- that they can
5 use to determine whether or not they want to continue
6 forward with the full size of the project and trigger
7 upgrades or potentially downsize the project to a smaller
8 size project which in -- in most case either reduces the
9 upgrade cost or eliminates that -- that upgrade cost.

10 So it -- it definitely provides a lot of
11 flexibility, you know, beyond what the interconnection
12 standards require. The interconnection standards require
13 us to study the project as it was proposed, but this is
14 -- I argue this is one, you know, along with cures,
15 instead of other things that, you know, we've gone, I
16 feel like, kind of above and beyond to try and
17 accommodate these projects.

18 Q And do these practices also impact other
19 projects, meaning while it provides benefits to the
20 projects receiving these -- these particular processes,
21 how do they impact other projects in the queue?

22 A They do, because the -- the mitigation options
23 require multiple studies of different size projects, so
24 it extends the study process. Then we provide those

1 mitigation options to the -- the developer, and they've
2 got time to determine, you know, what option they would
3 like to select, so all that takes time, so that does
4 delay the, you know, the -- the on-hold project or
5 project that is behind them.

6 One of the terms we've kind of coined is this
7 concept of, you know, we can deliver a fast no or a slow
8 yes, and we're trying to be supportive of -- of all the
9 new -- new -- renewable developers and, you know, work
10 with them to kind of deliver, I'll call it, a slow yes
11 versus a fast no.

12 Q So -- so if it was the Company's intention to
13 sort of thwart interconnection for some reason, do you
14 think it would be a good strategy to be granting all
15 these extensions and mitigation options and cure periods?

16 A I'm sorry. Ask the question again.

17 Q If -- if the Company's goal was to stop or to
18 thwart further interconnections, would -- would it be in
19 our interest to be granting all these extensions and cure
20 periods and mitigation options for developers?

21 A No, it would not.

22 Q Okay. Mr. Gajda, I have a few questions for
23 you now. Counsel for NCSEA had you read from comments
24 filed by solar developer Strata and 02 in the fall of

1 2016 in the E-100, Sub 101 interconnection docket. Do
2 you recall that discussion?

3 A (Gajda) Yes, I do.

4 Q And have you had a chance to refresh your
5 recollection of the various power quality events and
6 circumstances that led to the adoption of the CSR screen?

7 A Yes..

8 Q Can you provide a little background on that?

9 A Yes, I can. We -- we provided, I believe it
10 was in September of 2016, a -- there was a -- I believe
11 there was a -- I think it was a data request, but
12 essentially an order from the Commission to supply
13 information about various power quality events that we'd
14 experienced.

15 And so just to touch on one or two of those, we
16 talked yesterday about the kind of Campbell Soup event
17 and, you know, that event brought to light, and -- and
18 just quickly to mention to refresh everybody's memory, is
19 that was a 20 MW solar farm which at -- at one point
20 reconnected to the grid part of kind of normal
21 operations, and that -- and it caused the nearby Campbell
22 Soup facility to trip offline and lose some production.

23 And as we dug into that event, you know, what
24 we realized was that the -- the impacts that were

1 experienced were something that we had not been
2 previously studying for because it was in a factor
3 unknown to the industry. And so the -- really, the idea
4 of looking at stiffness or weakness of grid began to be
5 something that we -- we considered, and the specific
6 study analysis method that grew out of that very specific
7 event was a big learning, you know, kind of factor, I
8 guess you'd call it, for us.

9 But ultimately, that -- that event caused us to
10 do an analysis, which is not in the system impact study
11 process in the interconnection standards, so that's a
12 great example of our living laboratory and learning
13 something we didn't know before. Now we can implement
14 that and to the really the combined benefit of
15 interconnection customers and retail customers.

16 I'll just briefly mention one other event that
17 occurred in that general period of time, and it was for a
18 5 MW solar farm, and that was part of the information we
19 provided to the Commission. And unexplainably, a solar
20 farm was tripping offline fairly regularly, and when we
21 dug into the event, talked to the inverter manufacturer
22 and they analyzed the data, their -- their analysis
23 confirmed that their inverters were very sensitive in
24 responding to a -- a normal event on our grid. And their

1 comment was, oh, well, we've seen this before in other
2 countries in a -- we've seen this occur in what we call a
3 weak grid scenario.

4 And so the -- the fact that they mentioned that
5 this inverter responded like it did in a "weak grid," and
6 refreshing for the Commission that -- that a weak or
7 stiff or a weaker strong grid just refers to the location
8 on the grid, a weak area would just be a -- kind of a
9 rural area further away from generating plants and
10 transmission facilities.

11 So these events, combined along with some other
12 events, really drove us to just look at additional
13 analysis methods to make sure that we were capturing the
14 power quality events that -- that could occur.

15 Q And yesterday you were asked some questions
16 regarding the comments filed by particular developers in
17 that proceeding that related to this event. Did -- did
18 the Company also file comments in that proceeding?

19 A Yes.

20 MR. JIRAK: And if I may -- may approach the
21 witness.

22 CHAIRMAN FINLEY: Yes. You may approach.

23 MR. JIRAK: If we may, we'd like to mark this
24 Exhibit as DEP -- DEC/DEP Redirect Exhibit Number 1.

1 CHAIRMAN FINLEY: This document shall be marked
2 -- again, Mr. Jirak, how would you want it marked?

3 MR. JIRAK: We'd like to mark it as DEC/DEP
4 Gajda -- I think it's Gajda Redirect Exhibit Number 1.

5 CHAIRMAN FINLEY: It shall be so marked.

6 MR. JIRAK: Thank you.

7 (Whereupon, DEC/DEP Gajda Redirect
8 Exhibit 1 was marked for
9 identification.)

10 Q And what I've handed to you, Mr. Gajda, is --
11 is the Commission's order from -- from the conclusion of
12 that proceeding. Are you familiar with that order?

13 A Yes, I am.

14 Q Okay. And if you could turn to the -- to the
15 second page and -- and read from the third sentence of
16 the first paragraph. Could you read that for the
17 Commission?

18 A Yes. The sentence reads "The Commission is
19 satisfied that Duke is taking appropriate steps to ensure
20 electric service to retail customers is not degraded due
21 to the operations of newly interconnected generation
22 facilities."

23 Q And Mr. Gajda, what does is the significance of
24 that statement?

1 A Well, I -- I think what I read into -- into the
2 significance of that statement is that the -- I believe
3 the, you know, the Commission simply is recognizing that
4 -- that Duke is implementing good utility practice and --
5 and for the -- the sake of the retail customers,
6 recognizing that utility-scale generating facilities are
7 a new -- a new introduction to the grid and that we're
8 acting responsibly, making sure that we fulfill our
9 obligations to interconnect those facilities while making
10 sure that electric service to retail customers is -- is
11 not degraded, and that ultimately the -- the Commission's
12 authority is retained and maintained completely, looking
13 at the end result to those retail customers while we just
14 exercise responsibly under good utility practice.

15 Q Thank you, Mr. Gajda. Mr. Gajda, counsel for
16 NCCEBA yesterday asked you some questions regarding the
17 application of the material modification rules in the
18 North Carolina procedures to solar only projects that are
19 seeking to add storage resources. Do you recall those
20 questions?

21 A I do.

22 Q And counsel for NCCEBA specifically asked you
23 whether energy storage has benefits for all retail
24 customers. Do you recall that question?

1 A I do.

2 Q Are the interconnection procedures designed to
3 evaluate whether or not energy storage, paired with solar
4 resources, provides benefit to customers?

5 A They are not. The first question has to be,
6 well, what -- what do you mean by benefit. So from an
7 interconnection standards, interconnection procedures
8 perspective, they are designed to evaluate the impact of
9 a generating facility to the distribution or transmission
10 system and -- and also evaluate the impact, of course, to
11 our -- to customers, you know, on the -- that are already
12 located on the grid, and to make sure that at the end of
13 the day those -- the system and those customers are made
14 whole while accommodating the interconnection, and it
15 really doesn't go beyond that.

16 Certainly, there are many questions that likely
17 go beyond my pay grade and this proceeding that have to
18 do with PPA structures and a lot of things around that
19 that start to perhaps get to that benefit question, but
20 that's -- that's not what we see as part of the
21 interconnection standards.

22 Q And from a big picture perspective, can you
23 just remind the Commission why material modification in
24 North Carolina procedures is an important concept?

1 A Yes. I think I described it, you know, a few
2 times, that material modification is all about looking at
3 the -- a facility that wants to change its design and
4 then evaluating whether or not that is going to change
5 its impact to the grid.

6 And -- and the reason that's so important is,
7 under the scenario that we're discussing here, is that if
8 we look at, say, 400 distribution connected facilities
9 across, say, DEC and DEP today, if they were to
10 potentially add storage without an appropriate study
11 taking place to assure that we took account for how that
12 storage was going to operate, that's a -- that right
13 there kind of, I think, clearly describes why we -- why
14 the material modification provisions exist, why they're
15 so important. That would be a -- an issue that just
16 could not scale. And so that's why we have to be very
17 careful and to make sure we evaluate those impacts.

18 Q And in what ways would a solar plus storage
19 facility potentially operate in ways that are different
20 than a solar-only facility?

21 A Excuse me. So energy storage facilities just
22 really, as I have described, have a lot of flexibility in
23 what we expect they can do. And, of course, they are
24 very new -- new technology. We know they can charge. We

1 know they can discharge. We know they can do so rapidly.
2 We know that they will be -- they're implemented for
3 potentially different reasons. They can be used for
4 frequency regulation or to shift load. And so there's a
5 lot of questions as to how they can operate and -- and
6 whereas a solar facility clearly is delivering
7 electricity instantaneously proportional to the
8 irradiance from the sun at that exact moment. And so
9 that's a -- I think from a solar facility, that's a kind
10 of a well-known physical dynamic that we understand, and
11 we've been studying that for -- for a good amount of time
12 now. But a storage facility can just do many different
13 things and, therefore, you know, really needs to be
14 properly assessed.

15 Q And is it your -- and just to confirm, it's
16 your expert opinion that -- that those additional
17 operational capabilities will warrant further study than
18 -- than are typically applied to solar-only facilities?

19 A They do. If you -- you know, if you were to
20 ask me can we -- can we connect a storage facility to an
21 existing solar facility and -- you know, and can we do
22 within a few parameters and then not very much study it,
23 you know, as a licensed professional engineer, I -- I
24 wouldn't want somebody to ask me that because I -- I

1 would not -- I would not be able to conclude that I could
2 put my okay on that without -- without studying it.

3 Q Thank you. Mr. Freeman, I have a few other
4 questions for you. Earlier this morning you were asked
5 questions by counsel on behalf of the Attorney General's
6 Office regarding Duke's incentives as it relates to the
7 interconnection of solar projects. Do you recall those
8 questions?

9 A (Freeman) I do, yes.

10 Q And you were asked questions regarding the
11 Company's incentives as it relates to earning returns on
12 its investments. Do you recall those questions?

13 A Yes.

14 Q Is it your understanding that solar developers
15 are also for-profit -- are also for-profit entities more
16 often than not?

17 A That is my understanding, yes.

18 Q Therefore, it would reasonable to assume that
19 they are also incented to maximize their profits?

20 A Yes.

21 Q And would you think that the incentive of solar
22 developers to generate a profit for their investors or
23 shareholders or owners would inform the positions that
24 they take in this proceeding?

1 A I think that's correct, yes.

2 Q Mr. Freeman, you were also asked questions
3 regarding the Company's legal and regulatory obligations
4 as it relates to interconnection. Do you recall those
5 questions?

6 A I do, yes.

7 Q Would it be your understanding that if the
8 Company fails to perform its legal and regulatory
9 obligations to interconnect generator requests, as
10 applicable, that the -- the relevant regulatory bodies,
11 whether it's this Commission or FERC, would take action
12 to -- to require the Company to comply with those legal
13 and regulatory obligations?

14 A Yes. That is my expectation.

15 Q Okay.

16 MR. JIRAK: If we may, Chairman, we have a few
17 other redirect exhibits.

18 CHAIRMAN FINLEY: All right.

19 MR. JIRAK: Mr. Chairman, we'd like to mark the
20 Freeman Direct Figure 1 document as DEC/DEP Freeman
21 Redirect Exhibit Number 1.

22 CHAIRMAN FINLEY: All right. We'll mark it
23 that way. Did this come out of his testimony that --

24 MR. JIRAK: Yes, sir.

1 CHAIRMAN FINLEY: -- we've got in the record
2 already?

3 MR. JIRAK: Yes, sir.

4 CHAIRMAN FINLEY: All right. We'll do that
5 anyway, Exhibit Number 1.

6 (Whereupon, DEC/DEP Freeman Redirect
7 Exhibit 1 was marked for
8 identification.)

9 MR. JIRAK: And Freeman Direct 3 would be
10 marked DEC/DEP Freeman Redirect Exhibit Number 2.

11 CHAIRMAN FINLEY: All right. It shall be so
12 marked.

13 MR. JIRAK: Thank you. And while they're being
14 handed out, I'll just confirm that these are --

15 CHAIRMAN FINLEY: One (1) is --

16 MR. JIRAK: Sorry.

17 CHAIRMAN FINLEY: One (1) is 1 and 3 is 2.

18 MR. JIRAK: Sorry. Should have probably made
19 that a little easier for you.

20 (Whereupon, DEC/DEP Freeman Redirect
21 Exhibit 2 was marked for
22 identification.)

23 MR. JIRAK: While -- while these documents are
24 being handed out, I'll just confirm, as stated, these are

1 charts that were included in -- in Witness Freeman's
2 direct testimony as Figures 1 and Figures 3, as
3 indicated.

4 Q Again, Mr. Freeman, you were asked questions
5 regarding Duke's incentives as it relates to the
6 interconnection of projects of additional solar
7 generation to its system. And you and -- you and the
8 other witnesses in this proceeding have testified
9 extensively regarding the extensive efforts of the
10 Companies to achieve high levels of interconnection. Can
11 you briefly describe what's captured in these charts for
12 the benefit of the Commission? Maybe start with Freeman
13 Direct Figure 1 and then move on to Freeman Direct Figure
14 3.

15 A Sure. First, these charts came from
16 information from the US EIA, Energy Information
17 Association's, you know, information on -- on solar
18 connections throughout the country. So this first chart
19 looks at solar facilities going back in time; we use the
20 term "Into Operation All Time." It looks at projects
21 from 2 MW to 20 MW. And our attempt there was to
22 identify projects that are connected up to the
23 distribution system. Generally, what we've seen is 2 to
24 20 MW is the limit from a utility scale perspective what

1 would be connected on a distribution system.

2 So you can see by the -- the bars that, you
3 know, North Carolina for that set of projects, 2 to 20 MW
4 connecting up to the distribution system, I mean, in
5 North Carolina, so that's Dominion, us, and wholesale
6 customers, have connected up 380 projects. That
7 essentially dwarfs what other -- other states have
8 connected up. Especially when you think about California
9 as being the leader in that space, 2 to 20 MW, we've --
10 we've interconnected a tremendous number more than even
11 California.

12 And that's significant because connecting up
13 large utility-scale projects on the distribution system
14 is a real challenge. I mean, you're putting 5 to --
15 typically, we put 5 MW projects on the distribution
16 circuits, and that's like connecting up a pretty
17 significant industrial customer, larger projects on the
18 transmission system, a lot stronger system. Connecting
19 up an 80 MW project is much different. You're much more
20 isolated from, you know, individual customers and the
21 impact on customers. So that's the -- that's the Exhibit
22 Number 1.

23 Exhibit Number 2 looks at 2 MW all the way up,
24 including large transmission size projects. Doesn't go

1 back all the way back in time, but looks at projects from
2 2015 to 2018, and this is testimony to what we've done in
3 the past, say, five or -- three or -- say, four years or
4 so.

5 So, again, if you look at North Carolina, 283
6 projects compared to -- to California 184. We've
7 specifically identified the number of projects that Duke
8 has interconnected. And, again, compared to the top 10
9 is what we represent here, what we've been able to
10 connect up in North Carolina is significantly more than
11 in any other state.

12 Q And once again, you were -- the questions that
13 were directed to -- to you were around the Company's
14 incentives and the fact that the -- the one view that
15 potentially interconnecting additional generation, solar
16 generation, is bad for the Company. Would you agree this
17 -- the remarkable success of the Company in this respect
18 completely undercuts any assertion that the Company has
19 not exerted best efforts to interconnect nation leading
20 amounts of -- of distributed generation?

21 A Absolutely. I mean, I think the results
22 absolutely speak for themselves.

23 Q Okay. Now, back to the issue of incentives,
24 Mr. Riggins and Mr. Freeman, are you all familiar with

1 the incentive compensation plan that's available for DET
2 -- for certain DET employees?

3 A (Freeman) I think we are. I think I answered
4 that question earlier.

5 Q And were you able to refresh your understanding
6 of some of the details of that compensation structure for
7 DET employees?

8 A I think Mr. Riggins didn't respond. The first
9 time I did, I was kind of drawing a blank as to some of
10 the specifics that --

11 Q Yeah. Mr. Riggins can speak to this as well.

12 A (Riggins) Yes.

13 Q And can you just describe how the incentive
14 compensation plan works for DET employees as it relates
15 to the performance of interconnection related obligations
16 and commitments?

17 A Yeah. So all employees of Duke Energy have a
18 short-term incentive plan. The plan is made up of a team
19 component which is 50 percent and then, you know, a
20 higher level component which is another 50 percent, which
21 goes more toward earnings and some of the questions that
22 were being raised. But specifically, our team is -- is
23 judged based on interconnection process improvements that
24 we make, you know, things like deployment of Salesforce,

1 improving communications. That's why we're so driven to
2 do that. So at least 50 percent of that short-term
3 incentive plan is driven by those things that happen
4 within our team and not necessarily by earnings or other
5 drivers.

6 Q And -- go ahead, Mr. Freeman.

7 A (Freeman) Well, I was going to say more
8 specifically as I refresh my mind, I'll touch on two of
9 them. One of them, there is a specific line item around
10 implementation of Salesforce, and we've identified
11 certain components that we would -- would have online and
12 operating, you know, year over year. So in 2019 one of
13 them will be the -- the customer portal and getting that
14 online.

15 The other specific line item, to Mr. Riggins'
16 point, is a line item around identifying a -- and
17 quantifying a specific number of process improvements
18 that we make around the interconnection process.

19 Q And would you agree that the reason why the
20 Company has chosen to weigh a substantial portion of the
21 compensation plan for DET employees to the
22 interconnection success and -- and progress in particular
23 in interconnection activities is because the Company
24 takes very seriously its obligations to interconnect

1 solar generating resources in accordance to applicable
2 law?

3 A I would agree.

4 Q Counsel for the Attorney General's Office also
5 asked you a number of questions regarding a -- a large
6 transmission connected project that, Mr. Freeman, you
7 address in your testimony that's triggered the need for
8 significant transmission level upgrades in the
9 southeastern part of the state. Do you recall those
10 questions?

11 A Yes, I do.

12 Q And you were asked questions whether --
13 regarding this project and whether it will ultimately
14 lower cost to retail customers. Do you recall those
15 questions?

16 A I -- I do.

17 Q Just generally speaking.

18 A Generally, yes.

19 Q And, in fact, do you recall that she -- that
20 counsel specifically referenced such developments, the
21 upgrades, as being built on the developer's dime? Do you
22 recall that -- that statement?

23 A I do, yes.

24 Q Okay. To be clear, this project is not a state

1 jurisdictional interconnection request, correct?

2 A That is correct.

3 Q It's being constructed and developed and
4 designed and implemented under the FERC procedures,
5 correct?

6 A Correct.

7 Q So under the FERC procedures, when a project
8 interconnects under the FERC procedures, who ultimately
9 pays the cost of those upgrades?

10 A Retail customers.

11 Q Okay. And -- and the cost of those upgrades
12 are split between retail and wholesale customers,
13 correct?

14 A That's correct. Retail and wholesale
15 customers, yes.

16 Q So to be clear, on whose dime are these
17 upgrades being constructed?

18 A Well, ultimately, it's on, you know, our retail
19 customers' dime and wholesale customers' dime.

20 Q And would you agree that those upgrades have
21 been driven in large part by the significant --
22 significant high levels of penetration of distributed
23 energy resources in that portion of the state?

24 A I would agree, yes.

1 Q Finally, counsel for the Attorney General's
2 Office also directed your attention to page 15 of Kendal
3 Bowman's testimony, specifically item number 1. If you
4 don't have it in front of you, that's okay. I'm just
5 going to read from that specific item that she
6 referenced.

7 CHAIRMAN FINLEY: This is the avoided cost
8 docket, right?

9 MR. JIRAK: Yes, sir. The avoided cost
10 testimony of Kendal Bowman that was introduced as an
11 exhibit.

12 Q In that specific item, item 1 that was
13 reference by counsel, Ms. Bowman stated "PURPA's role in
14 the recent surging and uncontrolled growth of utility-
15 scale solar, including the significant long-term
16 financial obligations now being imposed on the Companies'
17 customers." On whose dime are those costs being
18 incurred, the -- the long-term obligations of -- of these
19 PURPA obligations -- PURPA PPAs?

20 A I assume you're referencing the Power Purchase
21 Agreements and the -- the price that we're paying under
22 the PURPA contracts?

23 Q Correct.

24 A Retail customers.

1 Q Mr. Gajda, I have a few last questions for you.
2 Yesterday you were asked questions by counsel for IREC
3 regarding good utility practice. Do you recall those
4 questions?

5 A (Gajda) Yes.

6 Q And counsel specifically inquired regarding the
7 Company's efforts to investigate the practices of other
8 utilities to assess best practice. Do you recall those
9 questions?

10 A Yes, I do.

11 Q So just to clarify, do the Companies regularly
12 engage with various industry groups that -- that provide
13 a forum for gathering information on best practices in
14 the industry?

15 A Yes, we do. I believe I mentioned, you know, a
16 number of examples of groups, IEEE, National Electrical
17 Safety Code, the Southeastern Electric Exchange, North
18 American Transmission Forum. These are a number of
19 groups. Even peer utilities such as Dominion, South
20 Carolina Electric & Gas, we've had a number of
21 discussions with in prior years. And, in fact, I'll
22 mention just several weeks ago -- I'm actually our
23 Company's lead in the new IEEE P2800, which is the new
24 interconnection standard for transmission-connected solar

1 facilities.

2 Q But is it also the case that some of the
3 technical situations and challenges faced by the Company
4 have no corollary in other utilities or other
5 jurisdictions?

6 A That's -- that's correct.

7 Q And this -- when we talk about a living
8 laboratory, that's -- that's the challenge that you're
9 describing?

10 A That's exactly right.

11 Q And in those instances how does the Company go
12 about implementing good utility practice?

13 A So, you know, I think primarily what we do is
14 we first, just to reiterate, we -- we look again to the
15 industry and to make sure that we're not missing
16 something. I think this new IEEE standard is -- is a
17 great example. The whole industry realizes that there
18 will be an increase in transmission connected solar
19 facilities, and a -- and a standard is needed. So in one
20 sense we will walk that walk along with the industry, but
21 to the degree that we will experience potentially more of
22 that faster than a lot of the industry, then we will rely
23 on, you know, our own engineers and consultants and to --
24 and -- and fall back on our study procedures as they are

1 in the interconnection standards and as have we -- as we
2 have studied before, to continue to determine exactly
3 what needs studied to -- to assure that the -- the same
4 construct remains, which is we study what is going to
5 happen on the grid, and then make sure that the grid and
6 -- and all other customers remain whole.

7 Q And along the same lines, counsel for NCSEA
8 also asked you to read from page 55 of your direct
9 testimony and seemed to suggest that Duke was challenging
10 the Commission's oversight or -- or "right to veto"
11 Duke's implementation of good utility practice. Do you
12 -- do you recall that conversation?

13 A I do.

14 Q Can you provide some context for the question
15 you're answering, starting on page 54 of your direct
16 testimony?

17 A Yes. And I don't -- I have it paged open, but
18 I recall that -- that the term in -- in my testimony
19 around veto was not really referring to the -- the
20 Commission issuing a veto. It was really referring to
21 the idea of -- of another -- some other group or entity
22 having the right to issue some sort of veto, and I
23 believe that's what we were challenging. And -- and just
24 to reiterate some testimony and comments from yesterday,

1 our -- you know, our assertion is that, that the
2 Commission maintains authority in all of these areas, and
3 that traditionally the Commission has not waded into
4 specific practices within good utility practice perhaps
5 unless necessary. They are more focused on the, again,
6 the direct customer experience such as voltage. I gave
7 the example of Commission Rule R8-17.

8 Q Thank you. Does Duke believe that its
9 implementation of good utility practice in North Carolina
10 has followed the Commission's direction in its 2016 Order
11 to take appropriate steps to ensure electric service to
12 retail customers is not degraded due to the operations of
13 newly interconnected generation facilities?

14 A Yes, we do.

15 Q Thank you.

16 MR. JIRAK: Mr. Chairman, if I may, I have one
17 last light-hearted question, if that's okay.

18 CHAIRMAN FINLEY: We like light-hearted
19 questions. Go ahead.

20 MR. JIRAK: All right. We -- we consulted with
21 Mr. Kaylor, who -- who would know -- who would know these
22 things, and he confirmed for us that Mr. Freeman will be
23 the first ever witness to have testified and left the
24 stand to immediately proceed to his retirement party

1 today. So in light of that fact, I wanted to ask one
2 final question.

3 Q Mr. Freeman, may I buy you a beer for forcing
4 you to testify on the day of your retirement party?

5 A (Freeman) Actually, I want more than just a
6 beer. I want something a little more stiff than that.

7 MR. JIRAK: Thank you, Mr. Chairman.

8 CHAIRMAN FINLEY: Questions by the Commission?
9 Commissioner Clodfelter?

10 EXAMINATION BY COMMISSIONER CLODFELTER:

11 Q Gentlemen, you've got a lot of good questions
12 this morning and have covered a number of topics, so I
13 have just a few things. Mr. Gajda, let me start with
14 you, and let me -- as predicate for the question I'm
15 going to ask you, let me tell you some things I've taken
16 from the testimony, and you can tell me if I didn't get
17 it right because these are the premises of the question I
18 want to ask you.

19 First is, you're going to be doing a -- sort of
20 a reassessment of your fast track screens with EPRI, and
21 that -- that's your intent and your plan going forward
22 from this point.

23 A (Gajda) That is correct.

24 Q So the second thing I took is -- is that you're

1 going to give Section 3 eligible customers now an option
2 to go straight to supplemental review and -- and bypass
3 the initial screens. That -- that's going to be an
4 option you're going to offer them, right?

5 A That -- in our redline, that's correct.

6 Q Right. So the third thing, and this is sort of
7 a conclusion I've drawn, is that you've got -- you've got
8 a two-step process. The initial screens, virtually all
9 projects fail the initial screens. Virtually all
10 projects then pass the supplemental review. The
11 conclusion I take from that is that your current initial
12 screens add no value to the process whatsoever.

13 So my question, really, is on an interim basis
14 while you're reevaluating those initial screens with
15 EPRI, why doesn't it make sense on an interim basis to
16 simply short circuit and put all projects immediately
17 into supplemental review without the customer needing to
18 ask for that? Why doesn't that shorten the process,
19 simplify the process, clarify the process, and maybe make
20 it less costly and more efficient while you're
21 reevaluating those screens?

22 A I guess I'll just mention that's a great
23 question. That's -- and I guess that's something that we
24 can take back and evaluate. I think the process, as

1 we've laid out in the redline, certainly allows for the
2 customer to do that. Again, I think -- I think, if I'm
3 understanding your question correctly, why, you know, why
4 should -- why have it an option? Why for an interim
5 period just allow it to move directly forward? I mean,
6 that's certainly something we could -- we could take back
7 and investigate, but --

8 Q Just as one --

9 A -- understand --

10 Q -- one member of this Commission, I'd -- I'd
11 like it if you'd do that because, again --

12 A I understand.

13 Q -- it seems to me you like your current initial
14 screens just add no value. They're not -- they're not
15 telling you anything. They're not telling the customer
16 anything. They need to be revised or else discarded and
17 -- and just use the supplemental review. Yes? Where did
18 I get it wrong?

19 A (Riggins) Not wrong. I just wanted to
20 clarify --

21 Q Sure.

22 A -- some of the information gathered in the fast
23 track screen does inform whether we would suggest the
24 customer go to supplemental review or go to full system

1 impact study, so there would be some missing benefit
2 there if you don't go through that process. So what we
3 offered up was for a customer that comes in, fast track
4 screen fails, they just go ahead and preauthorize us to
5 move straight into supplemental and bypass the delay, but
6 there is some learning that takes place in fast track
7 that we might say based on what we see, this customer
8 needs to go to full system impact study Section 4 and not
9 go through the supplemental review.

10 Q We've talked about percentages on -- on that
11 class of customers, but -- but what are the numbers? How
12 many customers who fail the initial screens then need to
13 straight to Section 4 review?

14 A I'd have to go back and see the -- the actual
15 statistics, but there would be more than you would think.
16 There's some -- there's some customers that are eligible
17 for fast track, but because of where they're situated,
18 maybe relative to line voltage regulators or others, that
19 would require full system impact study. We make that
20 determination as part of that fast track review and then
21 try to route them.

22 I believe one of the reasons we're so
23 successful in supplemental is we tend to put customers
24 that are there that are going to benefit supplemental,

1 and the ones that are not, you can somewhat anticipate we
2 put them to system impact.

3 Q If you could provide in a late-filed exhibit
4 what's the number that you -- you divert from fast track
5 on to Section 4, that would be interesting. And are
6 there particular screens that are more likely to cause
7 someone to have to go to Section 4 study, and perhaps
8 those could be the screens that you screen for and then
9 dispense with some of the ones that are not giving you
10 any -- any useful information for the customers who are
11 going to supplemental review. I'd be interested in
12 seeing that.

13 A Okay.

14 Q There was some -- there were some questions
15 asked you by Mr. Ledford yesterday and by your counsel on
16 redirect this morning about the use of mitigation options
17 and cure periods. And my question really is -- is to all
18 of you and any of you, is do you think -- is there any
19 value in having an express authorization for the use of
20 mitigation options and cure periods in the -- in the
21 protocol? Not prescriptive. Not prescribing what those
22 would be. Not necessarily saying it can be this, but not
23 that, but some sort of authorization so at least everyone
24 who is playing the game knows that that's -- that's out

1 there, that that's useful, and that you may be going to
2 use it. Do you think there's any value in saying it,
3 referencing it at all?

4 I think Mr. Ledford's question to you yesterday
5 was -- was -- expressed some concern that maybe you might
6 decide not to use it, and then you would say, well, we're
7 not going to use mitigation options anymore, we're not
8 going to allow a cure anymore because it's not provided
9 for in the protocol. So what I'm really addressing is
10 would it be helpful just to have a reference?

11 A (Freeman) I guess a couple -- a couple
12 thoughts. One is, I mean, we'll take back, you know,
13 kind of any suggested thoughts and -- and kind of look at
14 them and see if it makes sense. But when I think about
15 like mitigation options -- I was talking to one of the
16 intervenors yesterday a little bit about this -- what I
17 worry about a little bit is that if we were to kind of
18 formalize the mitigation process or kind of make it part
19 of the process, then -- I sometimes think in extreme when
20 I think about something -- then why wouldn't every
21 interconnection request, request at the highest level
22 they possibly could, 20, MW say? And then the Utility is
23 now responsible for kind of drilling down to get down to
24 -- you know, multiple studies to get down to, well, you

1 submitted 20 MW, but we can only connect up 2.

2 So I just -- and I know that's an extreme
3 example, but, you know, that's sort of what we're kind of
4 sort of doing with the mitigation, you know, process now,
5 is a typical project will submit for a 5 MW -- or 5 to 10
6 MW project generally, and then we'll come back and we'll
7 tell them, well, we've studied, you know, through this
8 mitigation process and you can only connect up 3 MW, or
9 we give you multiple, you know, multiple options. You
10 can connect 3 MW, no upgrades, continue on at your
11 proposed, you know, project size, but the upgrades are
12 "x."

13 I mean, it's a good question. I mean, we can,
14 you know -- you know, continue to look at it. They --
15 excuse me -- they can continue to look at it because I'll
16 be gone, but -- but that's one of my worries there.

17 The cure process, I think we are formalizing
18 more so, you know, the -- the cure process in putting
19 some, you know, timelines in -- in that. And, you know,
20 we're a little bit indifferent on whether it's 10 days,
21 20 days, 30 days, or whatever, but -- but we need to put,
22 you know, some definition around that so that -- so that
23 that, you know, doesn't continue to drag on. And even --
24 even some of the optionality that we provide to provide

1 extensions on providing data and things like, I mean, we
2 generally have not, to my knowledge, denied extension
3 requests, but the option is there depending on, you know,
4 circumstances whether we would approve, you know, an
5 additional extension or not. I mean, I think --
6 personally, I think keeping flexibility in what we're
7 doing today makes sense.

8 Q You want to allow for flexibility, but not make
9 it overly formalized. I understand.

10 A Yeah.

11 Q Thank you for that.

12 A I mean, I think there's a balance, you know,
13 there.

14 Q Yeah. For my next question, Mr. Riggins, I
15 think it's probably for you, but maybe for Mr. Freeman,
16 too, but -- so I want you to make two assumptions in
17 answering the question first. I want you to assume that
18 -- that the Company is satisfied with the credit quality
19 of the surety in question, and then second, I want you to
20 assume that your lawyers are satisfied with the terms and
21 conditions of the surety bond that's presented to you.

22 And so my question to you is, what are the
23 commercial circumstances that would make a surety bond
24 unacceptable as a form of financial security here?

1 Assuming my two things are true, you're -- you're
2 satisfied with the surety and the credit quality of the
3 surety, and your lawyers are satisfied with the form of
4 the bond, talk to me about what are the commercial
5 conditions under which you would find a surety bond
6 unacceptable.

7 A (Riggins) I'm certainly not a credit risk
8 expert, but assuming those two things that you talked
9 about, I think one thing that we could consider is, you
10 know, the ability to exercise on that with a surety being
11 more of an insurance product versus, you know, something
12 that's been reviewed as an actual letter of credit that
13 you can draw upon. Then in the event that there's
14 default or some reason to call on that, there would be
15 additional cost and time and effort to -- to draw on that
16 surety bond as opposed to other more acceptable forms of
17 credit.

18 A (Freeman) I'll just add that, you know, kind of
19 going back in history, I mean, historically, utilities
20 and others stayed completely away from the surety bond,
21 and I think to your point, I think surety bonds have
22 come, I'll call it, a long ways in terms of, you know,
23 some of the things that you talk about.

24 So, again, you -- you will see that, I mean,

1 we've gone from a, I'll call it, a just say no, to we're
2 now using surety bonds in certain circumstances. And I
3 think as we get more comfortable with surety bonds, I
4 think you will see us continue to kind of expand on the
5 use of surety bonds. But, you know, again, neither one
6 of us are credit experts, but, you know, we've gone from
7 just say no to using them in certain circumstances and
8 think that makes -- obviously, if we're doing it and
9 investigating it, we think it makes -- makes sense.

10 Q Thanks. Mr. -- Mr. Gajda, I need to -- to ask
11 you some questions about the material modification
12 discussion related to DC coupled energy storage. And I'm
13 not sure I followed it at all, so that's what I'm trying
14 to really get clear in my head.

15 But let me ask you a general question first.
16 It's my understanding that the -- based on the action
17 group CPRE status reports that there were four proposals
18 that came in that made -- passed the first round ranking
19 that had energy storage components, three in DEC and one
20 in DEP. Do you have any familiarity with those
21 proposals?

22 A (Gajda) I -- I don't specifically, no.

23 Q Do you -- do any of you know sort of what --
24 what, if anything, you learned about the characteristics

1 of those proposals that might be useful or might inform
2 the discussion we're having here about energy storage?

3 A I wasn't personally involved in the CPRE
4 evaluation, so --

5 Q Just not -- not really involved in the
6 evaluation?

7 A No, sir.

8 Q So you don't really know what -- what sort of
9 analysis was done with the storage aspect of those
10 proposals?

11 A I -- I can't speak to that myself.

12 Q And Mr. Freeman?

13 A (Freeman) You're referring to storage proposal
14 that came in through CPRE?

15 Q Right. Yes.

16 A Yeah. I mean, I don't think any of us have
17 been involved in the evaluation process. I think we're
18 still in that process now where our transmission and
19 distribution teams are evaluating those projects, and
20 that's generally being done by our -- either our
21 transmission planning organization and that study team or
22 our distribution study team.

23 Q Okay.

24 A And we're not privy to any more information

1 essentially than -- than you are.

2 Q All right. Well, then I'll -- I'll leave that
3 alone since you're -- you're not the guys to -- to ask,
4 so --

5 A All right.

6 Q -- but thank you for that. Mr. Gajda, in the
7 -- in the system impact study, is -- is one of the inputs
8 into the system impact study, just for education because
9 this is the first time I've -- I've really dealt with
10 this, is a -- is a 24-hour hourly production profile part
11 of the input that goes into the study? Do you -- do you
12 generate that, an hourly production profile?

13 A (Gajda) So if you're speaking currently --

14 Q Yes.

15 A -- kind of prior to, yes.

16 Q Yes.

17 A So we make an assumption as to the general
18 profile, so --

19 Q You make an assumption. You -- you don't
20 actually try to model it or ask the -- ask the proponent
21 of the project to model it?

22 A We don't. And one of the reasons is, for
23 example, in the standards today, I can't give you the
24 exact provision, but I believe it's in the material

1 modification section where it talks about the fact that
2 the DC to AC ratio of the solar farm can vary a little
3 bit and -- and vary to some degree, and that won't be
4 considered material. When -- specific to a solar farm
5 when that occurs, that -- that does literally change the
6 shape slightly of the solar profile. It will -- it will
7 essentially make it generate a little bit earlier in the
8 day and a little bit later in the day, but by a
9 relatively small amount. So, for example, that's just a
10 -- a known kind of adjustment we're aware of.

11 Our current study process, there -- we
12 identified, or I should say we have not identified a need
13 to, you know, study every point along that curve, as I
14 think I mentioned in -- in -- in testimony and in
15 comments yesterday. One -- the reason that we wanted to
16 make sure that we put that into the interconnection
17 request form in the standards was primarily because of
18 just the increase in complexity, especially around
19 storage, but then even potentially any other type of
20 facility just to make sure that we're properly capturing
21 those things in a study.

22 We just assume that studies have a -- there's a
23 good opportunity for studies to get more complicated
24 rather than less. I mentioned the concept of an 8760

1 study and the industry is discussing that. That's a lot
2 of computing time, a lot of complexity. We constantly
3 strike a balance between accuracy and expediency, so we
4 won't move to that kind of study unless it's truly
5 necessary. But we find that with the situation in North
6 Carolina and with the situation of energy storage on the
7 immediate horizon, that's a -- a responsible thing to ask
8 an interconnection customer.

9 Q Mr. Norqual's testimony -- I'm going to read
10 your -- this on page 13 of his testimony in case you want
11 to check me on it, but I -- I wrote it out and I think I
12 was accurate. He says -- he says, "The Working Group 2
13 would allow the addition of a DC coupled energy storage
14 facility provided the output was limited to daylight
15 hours."

16 A That's correct. I recall that.

17 Q Is that correct?

18 A I recall that statement.

19 Q Do you agree with it? Is that -- is he -- is
20 he right? Is that what Working Group 2 agreed on?

21 A Working Group 2 agreed on that, and what -- and
22 then what -- Duke came in, you know, essentially after
23 that and -- and stated that -- that -- because there were
24 a number of provisions that Working Group 2 talked about,

1 and then when we looked at that specific item, you know,
2 Duke essentially said, well, you know, daylight hours,
3 first of all, there's no official definition of daylight
4 and it changes throughout the year, so that's a concern,
5 and that didn't get addressed.

6 And -- and then beyond that, again, something
7 could operate at full output between daylight hours or it
8 could be a solar facility operating during daylight
9 hours, and those are two different characteristics. And
10 so I think what we realized was just, you know, we didn't
11 -- you know, perhaps Duke's fault that we didn't properly
12 make the working group aware of that. I think we did
13 discuss that some, but that was just a -- ended up being
14 a -- a matter of that was not consensus between us, if
15 that answers your question, but...

16 Q And just to refresh my recollection, I think
17 you told the Chairman yesterday that you don't actually
18 have any on-the-ground field experience with an
19 interconnected DC coupled storage facility in one of the
20 projects?

21 A We have -- Duke has an R&D facility --

22 Q Your R&D facility --

23 A -- that we currently operate --

24 Q In your R&D facility, correct.

1 A That -- that's correct. That's correct. Yes.

2 Q Okay.

3 COMMISSIONER CLODFELTER: That's all I have.

4 Thank you.

5 CHAIRMAN FINLEY: Commissioner Brown-Bland?

6 EXAMINATION BY COMMISSIONER BROWN-BLAND:

7 Q Mr. Freeman, I guess we're just determined to
8 make you do all the work you can on your last day. But
9 my questions are for you, and most of my questions are
10 questions that our staff is interested in, and so I'm
11 going to attempt to get them on the record for them. And
12 I say that to cover up my bad questions because I might
13 throw some of my own in there and blame it on the staff.

14 A (Freeman) I know all the good questions are
15 your -- your personal questions, right?

16 Q In terms of the process for small solar
17 installations like residential rooftop, before they are
18 actually interconnected, does Duke check to make sure
19 they filed a Report of Proposed Construction with the
20 Commission? Is that part of your regular process?

21 A I'm going to ask Mr. Riggins, our process
22 expert.

23 A (Riggins) Yeah. I -- you know, my team doesn't
24 see a lot of the less than 20 kW Section 2 projects that

1 come through, but I'm -- I'm pretty confident that the
2 ROPC is part of that requirement in order to have an
3 interconnection request deemed acceptable. I'd have to
4 go back and just absolutely check that.

5 A (Freeman) Yeah. That process is handled
6 through our renewable service center and, I mean, we can
7 do a subject to check if -- if that would help.

8 Q Is that a reasonable thing to be a part of a
9 process and something you could incorporate if you found
10 out it wasn't part of the normal process?

11 A I would think so, yes.

12 Q All right. And, again, on the rooftop solar
13 does the electricity from the solar panels serve the
14 customer directly or does it go on to the distribution
15 grid? And I'm -- I'm getting at whether they -- those
16 panels are delivering their output completely to the grid
17 and then those customers receiving their own use, energy
18 that they use from the grid, or do they actually --

19 A Well, this is generally --

20 Q -- use the energy from those panels?

21 A Well, I'm assuming you're referring to a net
22 metering project where it's connected up behind the, you
23 know, the -- the utility meter. The answer is that, you
24 know, depends on the hour, depends on the minute of the

1 day as to whether that solar facility is -- whether the
2 energy from that solar facility is being consumed by the
3 load on -- at the customer or whether it's being pushed
4 back on to the grid. And it -- it can change minute by
5 minute, literally.

6 Q Okay. If you think -- think about self-healing
7 grid as a means of reducing outage time for residential
8 customers, when there's an outage on a feeder where a
9 large generator has been added, can Duke still serve some
10 customers on that feeder from the other direction by
11 closing a switch?

12 A I'll let --

13 A (Gajda) Address that?

14 A (Freeman) Sure.

15 A (Gajda) Yes. In general, yes, we can. The
16 self-healing grid system is -- is designed, as I think
17 you understand, to help with reliability. And there is a
18 unique interaction with especially large solar facilities
19 in that they are studied on their native feeder, and when
20 that feeder has to be switched, especially as part of an
21 automated process that occurs in less than five minutes,
22 that -- for a number of reasons that -- that solar
23 facility is not -- ahead of time before they connect they
24 are not studied on their, what I'll call their alternate

1 feeder, you know, so -- and one of the aspects of self-
2 healing grid is that there -- there could be more than
3 two feeders involved.

4 There could be -- there's a lot of complexity
5 and it -- and it is very effective and works very well,
6 but one of the ways we've been able to deal with that is
7 to -- it's required some -- some systems work, some
8 automation with our distribution management system, but
9 when that self-healing grid operates, the solar facility,
10 say, on that alternate feeder will be -- will be
11 temporarily taken offline because if they were to stay
12 online, they might actually deliver too high of a voltage
13 because now they're -- they've been -- they're on another
14 feeder.

15 And so they're temporarily taken offline just
16 for the period of time that the -- that the grid is
17 switched. And the grid is typically -- on a distribution
18 system a self-healing grid switching event really is only
19 in place for the time it takes for our crews to repair
20 the fault. And then the grid is -- once the fault is
21 repaired, the grid is switched back to normal
22 configuration. That's typically a matter of hours. And
23 we -- we've described this to developers before and we --
24 to my knowledge, we've never had a complaint over it. So

1 -- so we've been able to make the two systems work
2 together. It just requires a -- a temporary interruption
3 of that solar facility.

4 Q All right. And I'm just trying to square that
5 up with Mr. Freeman's direct testimony where he discusses
6 how adding a generator to a distribution feeder could
7 eliminate the option of serving load growth or growing
8 load by feeding the customers from another direction. Do
9 you remember that? That was on page 17, lines 12 to --

10 A (Freeman) I -- I do remember that. I think --
11 I think what that's referencing is more kind of permanent
12 or, you know, kind of longer term, you know, shifting
13 load from one substation to another. I think in -- in
14 Mr. Gajda's testimony he kind of described that that
15 solar facility is generally kind of married to that
16 particular substation, so we lose a lot of flexibility.
17 You know, especially the farther out the circuit and the
18 bigger that facility is, the more of a challenge it is
19 to, you know, to shift load around. And generally the
20 load that you are shifting from one substation to another
21 is the load that's kind of further out on the system.
22 It's not generally the load that's closest in to the
23 substation. So, yes, over time that will impact our
24 flexibility.

1 Q So would you agree that that in some way
2 reduces the viability of -- of that initiative for the
3 self-healing grid or -- or no?

4 A I think -- I think, you know, as long as you're
5 kind of managing those facilities kind of on a temporary
6 short-term basis, I think it's not having a significant
7 impact.

8 A (Gajda) I think that's correct.

9 A (Freeman) Yes.

10 A (Gajda) Yes.

11 Q All right.

12 A (Freeman) Again, you're kind of thinking two
13 different time frames, long-term, you know, shifting a
14 load versus kind of short-term in an emergency type of
15 situation.

16 Q All right. And then on the topic of adding
17 storage facilities to an existing solar installation, has
18 -- has Duke received a request of that nature or is that
19 just something that's theoretical at this point?

20 A I've -- I've lost track as to how many, but I
21 know we have received requests, yes.

22 A (Riggins) We have.

23 Q All right. And -- but you don't know how many
24 or -- or any idea?

1 A I have a general idea. It -- I'd say it's less
2 than 10. Somebody mentioned in CPRE there were some
3 projects that were bid in as with and without storage, so
4 certainly we have those. We have had a couple of
5 inquiries that have come in about wanting to add storage
6 and -- and questioning whether that's material
7 modification or not. And I think we have a few projects
8 that were submitted as interconnection requests
9 specifically with storage to be studied.

10 Q All right. Have you dealt with storage being
11 added to a qualifying facility and energy being
12 discharged from that storage facility?

13 A (Freeman) No, no.

14 A (Riggins) We -- we responded to an inquiry as
15 to whether or not the additional storage would be deemed
16 material modification. We indicated that it would, and
17 then that inquiry was withdrawn, which is under the
18 procedures.

19 Q All right. I was just going to ask you a
20 question about the pricing, but since you haven't had
21 that -- let's see. On page 33 of your direct testimony
22 you discuss the FERC jurisdictional transmission tariff
23 which provides that the generators will provide full
24 prepayment for transmission upgrades, but then receive

1 full repayment after that. It's our understanding that a
2 provision of FERC's pro forma tariff, that they -- that
3 this is a provision from FERC's pro forma tariff, but
4 that this provision has been removed from transmission
5 tariffs for RTOs like PJM. And so our question is, has
6 Duke considered requesting this provision be removed from
7 its tariff?

8 A (Freeman) Which provision? The -- the
9 repayment provision or the full prepayment?

10 Q The repayment.

11 A I'm -- I'm not -- I'm not aware of the
12 repayment being removed.

13 Q The purpose being so that the generators would
14 no longer receive the refunds of their transmission
15 upgrade cost. So the question is, would Duke consider
16 that? Do you know?

17 A Oh, sure, because like I think, you know, we
18 talked about, you know, that -- that cost or that upgrade
19 is being triggered by, you know, an interconnection --
20 interconnecting generator, so there's a cost cause, you
21 know, kind of concept that we've, you know, kind of all
22 -- all recognized. Then when that cost is refunded, I
23 mean, it is a, you know, an impact on retail customers.

24 Q All right. And --

1 A So it does have a tendency to increase rates.

2 Q So to date, has Duke made any -- made any of
3 those refunds here in North Carolina?

4 A I mean, we've gone back -- I mean, these are
5 the first ones that have really been significant. If
6 we've made any refunds in the past, it's maybe been from
7 a, you know, a large third party kind of traditional
8 generator, but generally even those projects have found
9 location on the grid where they did not trigger network
10 upgrades. So I think this is really the first case
11 where, you know, a -- an interconnecting customer has
12 triggered a significant network upgrade.

13 I will qualify that, too, as I'm kind of
14 thinking -- thinking out loud with you. You know, I
15 mean, when we build a -- a new traditional plant, nuclear
16 plant or something like that, I mean, those costs are --
17 they're not generally refunded if it -- if it's Duke
18 owned, but those upgrade costs do go into, you know,
19 general rate base. And I think the same thing would
20 happen with -- I'm trying to think -- just think out loud
21 with you on, you know, if it's a third-party generator,
22 same thing would -- would happen.

23 Q All right.

24 CHAIRMAN FINLEY: Commissioner Brown-Bland, can

1 we -- okay to break for lunch?

2 COMMISSIONER BROWN-BLAND: Perfect. Let's keep
3 Mr. Freeman a little bit longer.

4 CHAIRMAN FINLEY: All right. We'll break --
5 don't -- don't buy him the drink at lunch, please,
6 because he's got to come back.

7 THE WITNESS: I've got a retirement reception
8 at 3:30, so I hope we're done by 3:30.

9 CHAIRMAN FINLEY: Oh, boy.

10 THE WITNESS: Maybe I shouldn't have said that.

11 COMMISSIONER CLODFELTER: I think we've got
12 enough questions to get past that.

13 MR. JIRAK: Chairman, we'd like to strike that
14 comment.

15 CHAIRMAN FINLEY: Come back at 2:00.

16 (The hearing recessed at 12:30 p.m.,
17 to be reconvened at 2:00 p.m.)

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STATE OF NORTH CAROLINA

COUNTY OF WAKE

C E R T I F I C A T E

I, Linda S. Garrett, Notary Public/Court Reporter,
do hereby certify that the foregoing hearing before the
North Carolina Utilities Commission in Docket No. E-100,
Sub 101, E-2, Sub 1159, and E-7, Sub 1156, was taken and
transcribed under my supervision; and that the foregoing
pages constitute a true and accurate transcript of said
Hearing.

I do further certify that I am not of counsel for,
or in the employment of either of the parties to this
action, nor am I interested in the results of this
action.

IN WITNESS WHEREOF, I have hereunto subscribed my
name this 13th day of February, 2019.



Linda S. Garrett

Notary Public No. 19971700150

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**Clerk's Office
N.C. Utilities Commission**