

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

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Citizens Against Clear	:	
Cutting, et al.,	:	
	:	
Complainants,	:	
	:	
vs.	:	Case No. 17-2344-EL-CSS
	:	
Duke Energy Ohio, Inc.,	:	
	:	
Respondent.	:	

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PROCEEDINGS

before Ms. Megan Addison and Ms. Anna Sanyal,
Attorney Examiners, at the Public Utilities
Commission of Ohio, 180 East Broad Street, Room 11-A,
Columbus, Ohio, called at 9:06 a.m. on Thursday,
November 8, 2018.

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VOLUME III

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1 Thursday Morning Session,
2 November 8, 2019.

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4 EXAMINER SANYAL: We'll go on the record.
5 Good morning, everyone. We are on the
6 third day of hearing for Case No. 17-2344-EL-CSS,
7 which is Citizens Against Clear Cutting versus Duke
8 Energy Ohio, Inc.

9 We'll dispense with taking appearances,
10 and I believe Duke would like to present the
11 testimony of Kevin McLoughlin, so it's
12 Mr. McLoughlin.

13 MR. McMAHON: That's correct, Your Honor.

14 EXAMINER SANYAL: Thank you.

15 Sir, prior to being seated, sir, could
16 you please raise your right hand.

17 (Witness sworn.)

18 EXAMINER SANYAL: Okay. You may be
19 seated.

20 Duke may proceed.

21 THE WITNESS: Hello? Hello?

22 MS. BOJKO: It's not on.

23 EXAMINER SANYAL: Press the button.

24 THE WITNESS: Hello?

25 EXAMINER ADDISON: Very good. Thank you.

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KEVIN T. McLOUGHLIN

being first duly sworn, as prescribed by law, was
examined and testified as follows:

DIRECT EXAMINATION

By Mr. McMahon:

Q. Good morning. Could you please state
your full name for the record.

A. Kevin T. McLoughlin.

Q. And, Mr. McLoughlin, do you have in front
of you, your Direct Testimony that was prepared and
filed in this case?

A. Yes, I do.

MR. McMAHON: Your Honor, we would like
to mark Mr. McLoughlin's Direct Testimony as Duke
Energy Ohio Exhibit 3, please.

EXAMINER SANYAL: It shall be so marked.

(EXHIBIT MARKED FOR IDENTIFICATION.)

MR. McMAHON: Thank you.

Q. Mr. McLoughlin, were you involved in the
preparation of that testimony?

A. Yes, I was.

Q. And is that testimony true and accurate?

A. Yes, it is.

Q. If I asked you all of the questions in

1 your written testimony, would you give me the same
2 answers set forth therein?

3 A. Yes, I would.

4 Q. And do you have any changes or edits to
5 that written testimony?

6 A. No, I don't.

7 MR. McMAHON: At this time, Your Honor,
8 Duke Energy Ohio tenders Mr. McLoughlin for
9 cross-examination.

10 EXAMINER SANYAL: Thank you.

11 Ms. Bojko and Mr. Dressel, you may
12 proceed.

13 MS. BOJKO: At this time, Your Honor, we
14 have a few motions to strike.

15 EXAMINER SANYAL: Actually, before we do
16 that, I believe I did not give Mr. Etter an
17 opportunity. Did you have any questions?

18 MR. ETTER: I will wait for Ms. Bojko.

19 EXAMINER SANYAL: Thank you.

20 MS. WATTS: Pardon me, Your Honor. May
21 we approach to give the court reporter a copy?

22 EXAMINER SANYAL: Yes, you may, and you
23 may approach freely during the examination of this
24 witness.

25 Okay. Ms. Bojko.

1 MS. BOJKO: Thank you, Your Honor.

2 EXAMINER SANYAL: Shall we go by the type
3 of motion to strike or are they all of the same
4 nature?

5 MS. BOJKO: No, I believe they're
6 individual, Your Honor.

7 EXAMINER SANYAL: Okay. We'll proceed
8 with the first one.

9 MS. BOJKO: I'm not going to promise none
10 of them overlap on the same rule, but I have them
11 separately identified.

12 EXAMINER SANYAL: Okay.

13 MS. BOJKO: The first one, Your Honor, is
14 page 6 of the testimony, lines 12 through -- oh, I'm
15 sorry. Sorry, Your Honor.

16 EXAMINER SANYAL: It's okay.

17 MS. BOJKO: Page 6, lines 12 through 22.
18 This is an improper opinion under Rule 702.

19 Mr. McLoughlin, in this section of his
20 testimony, offers a legal opinion regarding Duke's
21 rights in its easement. Unlike other witnesses
22 called this week by both sides in this case,
23 Mr. McLoughlin does not simply state the language of
24 the easement, he offers a legal opinion on what that
25 language means, including that it means Duke has a

1 legal right to cut, trim, remove, et cetera, trees
2 and other vegetation.

3 So under Rule 702, an opinion is an
4 expert opinion when it's on a subject matter that is
5 beyond the ordinary knowledge of a layperson; the
6 witness is qualified as an expert; and the opinion is
7 based on reliable technical, scientific, or other
8 specialized knowledge.

9 Here, Mr. McLoughlin is not an attorney,
10 so it is actually beyond his knowledge and expertise,
11 and he does not have the specialized knowledge to
12 render a legal opinion. So it is under Rule 702 that
13 we request that this language be stricken.

14 MR. ETTER: And OCC joins in this motion.

15 EXAMINER SANYAL: Thank you, Mr. Etter.

16 MR. McMAHON: Your Honor, Mr. McLoughlin
17 is not rendering a legal opinion here under Rule 702.
18 The easements, by the way, are in the record. A
19 number of easements were attached to various
20 Complainants' written testimony. He is merely
21 stating the obvious with respect to the Company's
22 rights. The language of the easements or the
23 Company's authority is not technically even before
24 the Commission; that is an issue for the Courts to
25 determine in any event. But the Complainants'

1 easements and the Company's right to remove, cut,
2 prune vegetation and trees within its rights-of-way
3 has already been established or discussed in other
4 testimony, and Mr. McLoughlin is simply discussing
5 that fact and how it relates to rights-of-way
6 management. It is not a legal opinion, per se. It's
7 just part of his analysis as an expert in vegetation
8 management.

9 EXAMINER SANYAL: In my opinion, I think
10 it's quite clear that Mr. McLoughlin is not an
11 attorney, and I think this issue would be resolved if
12 we just removed the word "legal." Would it be okay
13 just to remove that word? And I think -- I believe
14 Mr. McLoughlin is otherwise qualified to state what
15 he believes Duke Energy Ohio's rights are.

16 MR. McMAHON: The Company is okay with
17 that, Your Honor.

18 EXAMINER SANYAL: Ms. Bojko?

19 MS. BOJKO: Well, Your Honor, I think
20 that he is, in fact, attempting to render a legal
21 opinion. And I disagree wholeheartedly with
22 Mr. McMahon. It's not obvious. The whole reason to
23 strike this language is exactly what Mr. McMahon
24 claims; that it's a fact and it's obvious. It's not.
25 And that is the whole point of making this opinion,

1 he's trying to demonstrate that it is a fact and that
2 the easements are obvious.

3 And I wholeheartedly disagree that the
4 Commission does not have jurisdiction in this matter.
5 The vegetation management plan specifically says that
6 Duke is only allowed to remove if they have a legal
7 right to do so. So it is within the Commission's
8 jurisdiction to determine whether Duke is acting
9 properly, just, and reasonable under its vegetation
10 management plan. So this is being offered for the
11 truth that this is Duke's right, and that is what is
12 being contested here.

13 EXAMINER SANYAL: I'm going to go ahead
14 and issue my ruling. I will take out that word
15 "legal" and strike it from Mr. McLoughlin's
16 testimony. I think the Commission can determine,
17 from his testimony, as to what he is trying to say
18 based on his expert opinion.

19 So we will move on with your next motion
20 to strike.

21 MS. BOJKO: Just for clarity of the
22 record, Your Honor, you're talking about the word
23 "legal" on line 15 on page 6?

24 EXAMINER SANYAL: Correct.

25 MS. BOJKO: Thank you.

1 EXAMINER SANYAL: Thank you.

2 MS. BOJKO: Your Honor, our next motion
3 to strike is on pages 16 and 17 and 18. These are
4 photographs, and Mr. McLoughlin does not have the
5 foundation or the personal knowledge to render an
6 opinion or to put these in his testimony.

7 There's lack of foundation to the
8 photographs. Mr. McLoughlin has not actually taken
9 these photographs. He hasn't testified to where the
10 photographs were taken. He didn't testify whether he
11 witnessed the events in his testimony. In fact, he
12 has stated that he pulled these off of the internet.
13 So these are not photographs taken and they are
14 prejudicial and there's a lack of foundation to show
15 personal knowledge or that he did, in fact, have a
16 chain of custody and take these photographs.

17 Under Rule 602, inclusion of these
18 photographs should be stricken. It's also very
19 prejudicial given that these photographs have nothing
20 to do with the Complainants' properties at issue in
21 this case.

22 MR. ETTER: And, Your Honor, OCC will
23 join. It does appear that these photographs were not
24 taken on the Complainants' properties and, therefore,
25 it doesn't really indicate what the situation is on

1 those properties, so it may mislead the PUCO, the
2 Commission.

3 EXAMINER SANYAL: Thank you, Mr. Etter.

4 I think, Mr. McMahon, we can just ask the
5 witness as to what purpose he included these
6 photographs. Would that be okay? Unless you want to
7 go ahead.

8 MR. McMAHON: That would be fine, Your
9 Honor. I believe the written testimony, before each
10 photograph, actually does that, but I'm fine with
11 asking those questions.

12 EXAMINER SANYAL: Sure.

13 Mr. McLoughlin, could you just give us a
14 clarification as to what purpose these photographs
15 were used for?

16 THE WITNESS: They're illustrative in
17 purpose. What does a flashover look like; here's a
18 picture of it. What do certain types of trimming
19 look like; here's a picture of it. They're for
20 illustrative purposes to add a visual context to the
21 written statements.

22 EXAMINER SANYAL: I will make it clear
23 for the record that these photographs are for
24 illustrative purposes only.

25 Ms. Bojko, I'm going to deny your motion

1 to strike because you will have an opportunity,
2 during cross, to make it clear further for the
3 Commission that these are photographs just for the
4 purpose of explaining what these particular events
5 are, and are not illustrative of Complainants'
6 properties or the situations on those properties.

7 MS. BOJKO: Thank you, Your Honor. I'll
8 do it on cross.

9 EXAMINER SANYAL: Thank you. Let's move
10 on to your next motion.

11 MS. BOJKO: Sure.

12 If you turn to page 8. Page 8, line 12,
13 through page 9, line 3. Your Honor, this portion of
14 his testimony should be --

15 EXAMINER SANYAL: I'm sorry, could you
16 tell me those one more time?

17 MS. BOJKO: Page 8, line 12, starting
18 with the Question and Answer.

19 EXAMINER SANYAL: Okay. To 23?

20 MS. BOJKO: No, no. Yes. All the way
21 through that page and then over to page 9 to finish
22 out the answer --

23 EXAMINER SANYAL: Okay.

24 MS. BOJKO: -- line 3. So it's the whole
25 Q and A beginning on line 12 on page 8.

1 EXAMINER SANYAL: Thank you. Go ahead.

2 MS. BOJKO: Your Honor, this Question and
3 Answer should be stricken based on hearsay and lack
4 of personal knowledge. This witness has not stated
5 sufficient foundation, that sufficient foundation
6 does not exist to establish Mr. McLoughlin's personal
7 knowledge of the events as they are described in this
8 answer. He was not a witness to these events and,
9 thus, he lacks personal knowledge under Rule 602.

10 To the extent Mr. McLoughlin learned of
11 this information from after-the-fact consulting, it
12 is pure hearsay. Mr. McLoughlin is merely relaying
13 information he was told by witnesses and other
14 involved parties to the event, describing and
15 offering testimony for the truth of the matter
16 asserted therein that the events actually occurred as
17 he describes. This is hearsay.

18 Mr. McLoughlin has not identified the
19 individuals involved in the event described or even
20 stated the location or the year of the event in his
21 testimony. As such, Complainants cannot
22 cross-examine the witnesses, we cannot determine the
23 actual facts of these cases or the situation of those
24 that were involved in the situation. So he is
25 stating it for the truth of the fact that it actually

1 occurred, and that is pure hearsay and should be
2 stricken under Rule 802 and 602.

3 Additionally, the prejudicial nature
4 outweighs any probative value that this testimony may
5 add.

6 MR. ETTER: And if I may, Your Honor, OCC
7 also joins in for those reasons, plus the fact that
8 the line at issue in this example is a 345-kV line,
9 which is a much higher transmission line than those
10 -- much higher voltage line than those at issue in
11 this case.

12 EXAMINER SANYAL: Thank you.

13 Mr. McMahon, whenever you're ready.

14 MR. McMAHON: Your Honor, everything that
15 both counsel have indicated or expressed to the Bench
16 can be dealt with on cross-examination. In fact,
17 Ms. Bojko deposed Mr. McLoughlin and specifically
18 asked questions regarding this incident. He was a
19 consultant of the company. He actually visited this
20 homeowner. He discussed these facts and what he saw
21 on the scene. She can cross-examine Mr. McLoughlin,
22 today, during the hearing, about these events.

23 With respect to prejudicial, it appears
24 that everything Ms. Bojko doesn't like, somehow is
25 prejudicial. There's no prejudice here, Your Honor.

1 Mr. McLoughlin is trying to explain how flashover
2 events can occur and what he has seen in his
3 experience as a consultant in the vegetation
4 management industry.

5 He then goes on, in the rest of his
6 testimony, to directly connect it, regardless of
7 whether it was a 345-kV line or not, as to how those
8 events are relevant to the 138-kV lines at issue in
9 this case. He is an expert and he has knowledge
10 about these issues, and the foundation can be
11 established and he can be dealt with on cross.

12 EXAMINER SANYAL: I'll allow you a very
13 brief response.

14 MS. BOJKO: Thank you, Your Honor.

15 Just because I depose a witness, has no
16 bearing. It actually sheds light on how I know this
17 is pure hearsay. It is because Mr. McLoughlin did
18 not see the events, and his relaying of the events,
19 as Mr. McMahon just stated, is to prove the truth of
20 the matter that it happens and it can happen, and
21 that is completely hearsay. It's based on hearsay,
22 out-of-court statements on a line that is not
23 comparable to the line here, so it's also irrelevant.
24 And it happened in New York. It did not even happen
25 in the State of Ohio. So this is pure hearsay. And

1 I think Mr. McMahon's statements explained exactly
2 why it's hearsay. And the purpose they're trying to
3 use it for is not permitted under the hearsay rules.

4 EXAMINER SANYAL: Ms. Bojko, I'm going to
5 go ahead and deny that motion. I think, as
6 Mr. McMahon explained, you will have an opportunity
7 to cross on this matter extensively. I think the
8 record is quite clear that this was a 345-kilovolt
9 transmission line and not a 138, so I think the
10 Commission can deduce that from the testimony.

11 And additionally, Mr. McLoughlin was
12 retained as an expert, so he is allowed to testify
13 with regard to personal experience he has on matters
14 he has consulted on previously. So we will move on.

15 MS. BOJKO: Thank you, Your Honor.

16 My next motion to strike is on page 5 of
17 the testimony. This, Your Honor, starts with
18 line 14, "In fact," then it goes over through the
19 rest of that answer into the next page, onto line --
20 page 6, line 2. Oh, actually, it goes to line 11
21 because the next question asks him about the same
22 document.

23 First of all, the objection -- there are
24 multiple objections with regard to this hearsay.
25 First of all, it's not cited at all, so these are

1 quotes that are undocumented, unreferenced and
2 uncited, which is inappropriate in expert testimony.

3 Secondly --

4 EXAMINER SANYAL: One moment.

5 MS. BOJKO: -- the relevance --

6 EXAMINER SANYAL: One moment. Isn't the
7 NERC/FERC Staff Report included in the -- as part of
8 Mr. McLoughlin's testimony?

9 MS. BOJKO: Well, the only reason we
10 found out that's what he was referring to and the
11 quotes he was taking from was from the deposition,
12 Your Honor. There's no citation to that attachment.
13 It is, but there's no citation that that's the actual
14 Staff Report he was referencing.

15 EXAMINER SANYAL: Go on.

16 MS. BOJKO: Yes, Your Honor. And we're
17 going to move to strike the attachment as well, Your
18 Honor.

19 The testimony is irrelevant under Rules
20 401 and 402. The findings in a report of a different
21 outage on lines in a different area, not in the
22 Cincinnati area, not in Duke Energy Ohio's territory,
23 is irrelevant to the case here. It was different
24 kilowatt voltage, it was different types of lines,
25 different types of vegetation.

1 Mr. McLoughlin does not have any personal
2 knowledge. He didn't even go and consult on this
3 outage after it happened. So there is no link to, as
4 you just stated, to build upon his expert knowledge
5 in this case. He has no knowledge. He pulled this
6 off the internet and is opining by it.

7 It is not an exception to hearsay either.
8 It is not a FERC Report. It's not a FERC Order.
9 It's not by a State agency. It's merely one party's
10 recommendation in a proceeding in front of the
11 Federal Energy Regulatory Commission.

12 Just as I could not bring in a
13 recommendation from another party in a case before
14 the Commission, such as the marketers; he cannot
15 bring in a recommendation from a litigated case or a
16 case before another State agency into this proceeding
17 and adopt it as if it is his own. And he is also
18 trying to adopt it as if it's a FERC Order, which it
19 is not a FERC Order.

20 EXAMINER SANYAL: Could you tell me where
21 he states that this is a FERC Order? Or is this --
22 you're conjecturing this, or -- or he's not --

23 MS. BOJKO: I'm saying that's the
24 implication, Your Honor, that this was a statement
25 and finding by the Federal Energy Regulatory

1 Commission when it's not. It is merely a Staff
2 Report from the Federal Energy Regulatory and NERC
3 about one incident that happened in October 29, 2030
4 (sic), which is not the time period of this
5 Complaint. It's not the same area as this Complaint.
6 He was not witness to the snowstorm and he did not
7 consult on the snowstorm after it was done. So he
8 has no personal knowledge to base any kind of expert
9 opinion with regard to this incident that occurred in
10 2011.

11 EXAMINER SANYAL: Mr. Etter.

12 MR. ETTER: OCC concurs with this motion,
13 Your Honor.

14 EXAMINER SANYAL: Thank you.

15 MR. McMAHON: Your Honor, Mr. McLoughlin
16 testifies that this is a NERC/FERC Staff Report.
17 This is considered a learned treatise exception at a
18 minimum, or the Bench -- the Commission could take
19 administrative notice of this report.

20 All he's doing is trying to explain an
21 outage with respect to vegetation management and the
22 implications from such an outage with respect to a
23 recognized incident that has occurred. As Ms. Bojko
24 acknowledged, the report is attached. And the quote,
25 while there might not be a cite in his testimony, she

1 is aware that he is referring to the report that is
2 attached to his written testimony and, therefore, she
3 can cross-examine the witness on this issue.

4 He is an expert and, as you previously
5 acknowledged, he is allowed to testify about events
6 that he has considered in the past that fall within
7 the scope of his expertise and this is certainly one.

8 I do not know why, again, Ms. Bojko
9 thinks that trees are unique in Ohio versus New York
10 or other jurisdictions. These events go across state
11 boundaries and these are issues that she can
12 cross-examine the witness about.

13 MS. BOJKO: Your Honor, may I just
14 respond to the exception that he raised?

15 EXAMINER SANYAL: Sure.

16 MS. BOJKO: The learned treatise
17 exception. This is not, because it's not published
18 by a Federal agency or a State agency. But in
19 addition to that, it wasn't a published document as
20 the type that is considered to be a learned treatise.
21 But in the addition to that, under Rule 803(18), a
22 document can only be read into the record that's
23 deemed to be a learned treatise or a portion of it.
24 It is not allowed to be submitted as an attachment
25 and entered into the record, and that's under the

1 hearsay exception, 803(18). It can only be taken as
2 judicial notice. It may not be read -- entered into
3 evidence in the case.

4 EXAMINER SANYAL: I'm going to go ahead
5 and ask the witness a question.

6 Mr. McLoughlin, is the Staff Report in
7 question, the FERC/NERC Staff Report, is it -- is a
8 report like this usually generated after a weather
9 event such as that happened --

10 THE WITNESS: Yes, major --

11 EXAMINER SANYAL: -- such as the one in
12 October 2011?

13 THE WITNESS: Major events that cause
14 outages, NERC or FERC, if it seems fit to write
15 reports. There are a number of these type of reports
16 for different events. There was an outage in the
17 Southwest; a report was issued. There was an outage
18 in Florida, a big outage in Florida; a report was
19 issued. So these are documents that you notice the
20 language is for the whole utility industry to learn
21 from. They go in, look at the situation, what
22 happened, what caused it.

23 The report is filled with facts and
24 figures. And this is kind of a unique report in the
25 fact that both NERC and FERC Staff worked on it

1 together and agreed to everything, so that's kind of
 2 unique in that sense, and that's the only one I know
 3 of where they've done this, where they've worked
 4 together to produce a report for the benefit of the
 5 utility industry and what happened in that snowstorm.

6 EXAMINER SANYAL: And just to clarify, a
 7 report such as this would be used by experts in your
 8 field --

9 THE WITNESS: Most definitely.

10 EXAMINER SANYAL: -- to provide guidance?

11 THE WITNESS: Most definitely. It's a
 12 very good report.

13 EXAMINER SANYAL: Ms. Bojko, I'm going to
 14 deny the motion to strike at this point, simply for
 15 the reason that you will have ample opportunity to
 16 cross-examine the witness on this matter. And I
 17 think it is quite clear from the record that, you
 18 know, I know you stated that there might be an
 19 implication that this is a NERC/FERC Order. I think,
 20 from my reading of the testimony, it's quite clear
 21 that this is a Staff Report that the expert relied on
 22 to formulate his opinions. So the Commission can
 23 give it the weight it deserves while formulating the
 24 Commission's decision.

25 MS. BOJKO: Just to make sure we have the

1 cross-examination correctly, I'm going to ask for
2 clarification. You're suggesting that I can cross
3 him on a report that he didn't write, about the words
4 in the report, and the incident that he didn't see?

5 EXAMINER SANYAL: Ms. Bojko, you can
6 cross him on how he utilized this report to formulate
7 his opinions and that will be -- and, from that
8 cross-examination, the Commission can give it the
9 weight it deserves.

10 MS. BOJKO: So is the report in or out?

11 EXAMINER SANYAL: It is in.

12 MS. BOJKO: So I can cross him on
13 anything in the report?

14 EXAMINER SANYAL: And -- yes, and we will
15 come to the objections when they arise.

16 Okay. Let's move on.

17 MS. BOJKO: Those are all.

18 EXAMINER SANYAL: Okay.

19 MS. BOJKO: Those are all the motions I
20 have, Your Honor.

21 EXAMINER SANYAL: Okay. So, in that
22 case, you are welcome to proceed with cross --

23 MS. BOJKO: Thank you.

24 EXAMINER SANYAL: -- whenever you're
25 ready.

MS. BOJKO: Thank you, Your Honor.

- - -

CROSS-EXAMINATION

By Ms. Bojko:

Q. Good morning, Mr. McLoughlin.

A. Good morning.

Q. Nice to see you again -- or, hear you again, I guess. I didn't see you.

A. Yeah. It's always good putting a face to the voice.

Q. Exactly. I did not picture you as such, so it's good.

A. People usually say they think I'm a lot taller.

(Laughter all around.)

Q. Mr. McLoughlin, you're currently employed as a Senior Consultant for Environmental Consultants; is that correct?

A. That's correct.

Q. And that's on a part-time basis?

A. Part-time basis. As needed.

Q. And is it okay if I refer to Environmental Consultants, Inc. as "ECI" for short?

A. Correct. That's what most people do.

Q. Okay. Great.

1 Duke Energy is one of your clients?

2 A. Yes.

3 Q. Is Duke Energy Ohio one of your clients?

4 A. Yes.

5 Q. And are you familiar Steve Holton?

6 A. Slightly. It's one of the names that
7 have popped up. I've seen the name.

8 Q. So Steve Holton was an employee with
9 ECI; isn't that correct?

10 A. I believe so. There's been a lot
11 of employees over the years. I don't work at the
12 main office. I'm a Senior Consultant, so I don't get
13 to see all of the employees, many hundreds and
14 hundreds of employees.

15 Q. So did you -- did you work for ECI in
16 2016-'17?

17 A. That's correct.

18 Q. And isn't it true that Steve Holton
19 worked at ECI in 2016-'17?

20 A. I'm not sure.

21 Q. And Steve Holton is now a Duke Energy
22 employee; is that correct?

23 A. I believe. Yes, yes.

24 Q. So you never spoke to Steve Holton?

25 A. I have, but, I mean, I talk to a lot of

1 people. What I try to do to formulate my opinions is
 2 not to get overly personal, but to go out and look at
 3 the facts of the case and get to know what's going on
 4 on that line. So I met many different Duke
 5 employees. And Steve, I think he might have been a
 6 consultant at the time and is now an employee of
 7 Duke. But I try not to get overly involved with
 8 different names and faces because I consult all over
 9 the country and it's -- I like to keep, you know, not
 10 be overly persuaded by personalities but to look at
 11 the facts of the case.

12 Q. So when you said you met with Steve
 13 Holton, he might have been a consultant at the time,
 14 so you're talking about you met with Steve Holton
 15 when he was a consultant?

16 A. He might have been at the time, yes.

17 Q. And he was consultant with ECI, your
 18 company, correct?

19 A. Correct.

20 Q. So as an ECI employee, you met with Steve
 21 Holton, an ECI employee, on behalf of Duke?

22 A. I believe so. I worked on a case down in
 23 Kentucky.

24 Q. And you --

25 A. And there were people that came out and

1 helped me locate the right-of-way, and I did most of
2 the work myself, so that might have been when it
3 occurred.

4 Q. And you're aware that from ECI, Steve
5 Holton went in house to Duke Energy.

6 A. I believe so, that's correct.

7 Q. And you're aware, Steve Holton is in the
8 courtroom today, isn't he?

9 A. Yes, yes.

10 Q. And he has been all week with you,
11 correct?

12 A. Right.

13 Q. And you mentioned the Kentucky case.
14 Isn't it true that you had an opportunity to work
15 with Steve Holton on this case?

16 A. Yes. He was one of the people that came
17 out with us to look at the lines and then he left,
18 and I did all the rest of the work myself.

19 Q. So was he a Duke employee or was he an
20 ECI employee when that occurred?

21 A. I believe he might have been an ECI
22 employee. He was a contractor.

23 Q. So he was with your same company.

24 A. Correct.

25 Q. And you were hired as an independent

1 consultant for Duke in this case?

2 A. That's right.

3 Q. But an employee of yours already worked
4 for Duke.

5 A. ECI has, outsourcing to many utilities,
6 contractors. I'm not aware of where they are or who
7 they are. I'm a Senior Consultant. He could have
8 been working for any number of companies.

9 Q. But on this case --

10 A. So we had no other, you know, no other
11 company functions together at all.

12 Q. Okay. But in this case, ECI was on both
13 sides. ECI was representing Duke on the vegetation
14 management and then ECI was representing the alleged
15 independent consultant, correct?

16 A. In a sense, yes. Although I'm hired
17 quite independent from ECI, I use them to pay for all
18 the insurance, to market my name, and make things
19 easier on the paperwork end. I don't have -- I'm not
20 self-employed, so I use ECI, you know, to do all the
21 work.

22 Q. You get a paycheck from ECI, correct?

23 A. For the number of hours I bill, that's
24 correct.

25 Q. And would it be fair to say that when

1 Duke conducts its vegetation management activities,
2 it uses ECI's services?

3 A. In some cases, I believe yes.

4 Q. But it -- it uses ECI's services not from
5 an independent consultant perspective, which it does
6 too, but I mean it uses ECI services from a
7 vegetation-management-implementation perspective; is
8 that correct?

9 A. That would be a fair summary.

10 Q. Mr. McLoughlin, you're not an engineer,
11 are you?

12 A. No, I am not.

13 Q. And you're not an electrical engineer,
14 are you?

15 A. No, I am not.

16 Q. And you're not a certified arborist.

17 A. No, I am not.

18 Q. Have you ever been a lineman, sir?

19 A. No.

20 Q. Have you ever actually trimmed and pruned
21 trees on an electric line?

22 A. No.

23 Q. Have you ever actually trimmed and pruned
24 trees professionally?

25 A. Yes.

1 Q. Let's turn to page 2, lines 1 through 15
2 of your testimony, sir. Are you there?

3 A. Yes.

4 Q. At this point in your testimony, you
5 discuss a blackout that occurred in 2003; is that
6 correct?

7 A. That's correct.

8 Q. And you state that this blackout was
9 caused by a transmission line in FirstEnergy Ohio's
10 territory; is that correct?

11 A. That's correct.

12 Q. And these transmission lines in
13 FirstEnergy's territory were not in Duke Ohio's
14 territory, correct?

15 A. That's correct.

16 Q. And those lines were also 345-kV lines,
17 correct?

18 A. Correct.

19 Q. And you were not a witness to the 2003
20 blackout, of the fault, is that correct?

21 A. Not of the fault, but I was one of the
22 people that was blacked out.

23 Q. Yeah. You were not a witness to the
24 outage.

25 A. No, I was not a witness.

1 Q. You can't speak to the incident of the
2 outage.

3 A. Not except by reading the reports that
4 FERC produced.

5 Q. That staff of FERC produced.

6 A. Sometimes they had consultants do it.
7 Sometimes it was a -- the big blackout report was a
8 select group from all over the industry that produced
9 that blackout report. I believe, at that time, the
10 Vice President for the Power Authority was one of the
11 members on that blackout report.

12 Q. It was not a Federal Energy Regulatory
13 Commission report, correct?

14 A. It was done under the auspices of FERC,
15 but I don't know -- again, the report was written by
16 a select group of experts.

17 Q. So it wasn't a Commission Order by the
18 Federal Energy Regulatory Commission, correct?

19 A. I would have to check. Subject to check,
20 I'm not sure.

21 Q. And you would agree with me that the
22 lines at issue in this case are 138 kV, correct?

23 A. That's correct.

24 Q. And in your testimony you include a link
25 to the report that was prepared by the 2003 blackout,

1 correct?

2 A. Correct.

3 Q. Would you agree with me that the report
4 considered all possible factors that contributed to
5 the blackout in 2003?

6 A. It considered many, many factors; that's
7 true.

8 Q. And the report states that FirstEnergy's
9 vegetation management was only one of those many,
10 many factors that you just referenced.

11 A. That's correct. It was often referred to
12 as the trigger. If it wasn't for the trees causing
13 the outages, there wouldn't have been any blackout,
14 but there were many other factors involved with that
15 blackout.

16 Q. So the report specifically stated that
17 inadequate vegetation management was not the only
18 cause of the outage, correct?

19 A. Correct.

20 Q. And you would agree that the report found
21 that FirstEnergy and ECAR, which is FirstEnergy's
22 Reliability Council, failed to assess and understand
23 the inadequacies of FirstEnergy's system, correct?

24 A. Correct.

25 Q. And it found specifically that

1 FirstEnergy did not operate its system, its
2 electrical system, at an appropriate voltage
3 criteria, correct?

4 A. Correct.

5 Q. The report also found that FirstEnergy
6 had inadequate situational awareness that led it to
7 fail to recognize the deterioration of its electrical
8 system, correct?

9 A. Correct.

10 Q. The report also found that the
11 interconnected grids' reliability organizations
12 failed to provide effective, realtime diagnostic
13 reports, correct?

14 A. Correct.

15 Q. And regarding the tree contacts that
16 contributed to the blackout, you would agree that one
17 tree that contacted a wire was measured at 42-feet
18 tall, correct?

19 A. I believe that's correct.

20 Q. And this tree was measured to be 42-feet
21 tall in the wires after the tree had been removed; is
22 that correct? After part of the tree had been
23 removed, excuse me.

24 A. I believe so.

25 Q. You would further concur that the

1 transmission wires in that case were almost at the
2 level of the trees. They were approximately 35- to
3 42-feet high along with the wires.

4 A. Well, again, the wires are a highly
5 variable part of this equation. As more energy is
6 put on the conductors, they heat up so that at any
7 given time the wires could be further away or closer
8 to that tree. And that's only -- what they have
9 there in that report is an estimate of what they
10 think it was at about the time the outage occurred.
11 But there are factors, such as ambient temperature
12 and wind speed, that could not really be fully
13 accounted for; so the conductors could have been
14 closer or a little further away from those trees than
15 estimated.

16 Q. So are you disputing the fact that the
17 report found that the trees were in the wires or
18 close to the wires, less than a minimum clearance
19 distance?

20 A. No, they were close, but how close or how
21 far, it's highly variable.

22 Q. And what's the NERC minimum standard,
23 sir?

24 A. Well, there wasn't any at the time.

25 Q. What is it now? 2.3 feet; is that

1 correct?

2 A. For 138, the minimum vegetation clearance
3 distance for 138 at about sea level is about 2.2,
4 2.3 feet.

5 Q. And what about for the lines at issue in
6 this case, the 345?

7 A. They're in the 4- to 5-foot range.

8 Q. Right. So the NERC report found that the
9 trees encroached into the minimum clearance range,
10 correct?

11 A. Again, that range was not determined at
12 the time of the blackout, but they would have been in
13 about that range, that's correct.

14 Q. Well, isn't it true that the report is
15 one of the reasons that we have the NERC minimum
16 standards, minimum clearances?

17 A. The blackout is the reason --

18 Q. Right, I'm sorry.

19 A. -- why we have standards.

20 Q. The blackout is the reason the report was
21 written, and then the minimum standards were created
22 to attempt to not ever create the situation where the
23 blackout would occur.

24 A. A whole host of things occurred. The
25 Electrical Reliability Organization was formed under

1 the Federal Power Act of 2005 and, from that, NERC
2 became the ERO and started developing enforceable and
3 mandatory standards --

4 Q. Right.

5 A. -- of which one is the TVM standard, the
6 transmission vegetation management standard, which
7 now goes by the acronym FAC-003 -- or, 003-4.

8 Q. So it's fair to assume that when the NERC
9 standards were originally created and have been
10 adopted ever since, that they took into consideration
11 what had happened in 2003 and wrote the standards to
12 ensure that that 2003 blackout did not happen again,
13 at least from the perspective of vegetation
14 management.

15 A. Yes. They also looked at the -- there
16 was a separate report, the vegetation management
17 report, separate from the blackout report, that was
18 also written and also used as guidelines in the
19 developing the new standards.

20 Q. And those standards remained the same for
21 -- for 138, it's 2.3 minimum clearance, and then for
22 the 345, it's the 3 to 5 feet you discussed.

23 A. Right. The irony is that 138s are not in
24 the standards. The bright line in the TVM standard
25 right now is 200 kV and above with some exceptions.

1 Q. Right. And --

2 A. So the standards do have numbers going
3 down to 69 kV. And, in the future, it's the feeling
4 of many of the industry that these standards will
5 apply to lower-voltage lines down to 69 kV. All the
6 other NERC standards are at the 100-kV bright line;
7 all of them. The BES, the Bulk Electric System
8 definition, which FERC and NERC have worked out over
9 the last few years, is 100 kV as well.

10 So the only outlier at this time that I'm
11 aware of are the TVM standards that have the bright
12 line of 200, but the table you're referring to does
13 go down below the 200 kV, down to 138, down to 69.

14 MS. BOJKO: Your Honor, I move to strike
15 everything after "in the future." First of all, that
16 was nonresponsive to my question. He answered my
17 question and then some. And it is also -- it is also
18 speculative. He has no idea what's going to happen
19 in the future. And he also quoted some hearsay in
20 there. He said others in the industry believe. He's
21 not allowed to make hearsay, out-of-court statements
22 when he's testifying.

23 EXAMINER SANYAL: So I think we're going
24 to invoke the famous AE Addison "One Bite at the
25 Apple" Rule at this time. So, Mr. McLoughlin, in the

1 future if you could keep your answers concise to what
2 Ms. Bojko is asking you.

3 I do believe his response, he was just
4 giving his expert opinion on what the future may hold
5 for the industry, so at this point we will move on,
6 but I will note for the record that the expert is to
7 keep his answers to your questions in the future.

8 THE WITNESS: What I was actually trying
9 to do, she mentioned that the standards she was
10 referring to, the table, goes below the standard
11 requirements.

12 EXAMINER SANYAL: Right. We just
13 don't --

14 THE WITNESS: So they're --

15 EXAMINER SANYAL: -- have the table in
16 front of us at the moment.

17 THE WITNESS: So they're not really
18 applicable.

19 EXAMINER SANYAL: Right.

20 MS. BOJKO: Your Honor --

21 EXAMINER SANYAL: Let's move on.

22 MS. BOJKO: I move to strike that too.

23 EXAMINER SANYAL: Let's move on.

24 Q. (By Ms. Bojko) Mr. McLoughlin, NERC is
25 tasked with establishing regulations that utilities

1 must follow, correct?

2 A. Correct.

3 Q. And one type of regulation that NERC
4 issues is reliability standards, correct?

5 A. Correct.

6 Q. And, in fact, NERC has issued 83
7 reliability standards, right?

8 A. I believe it's actually more now. It was
9 83 initially.

10 Q. So your testimony is incorrect as
11 written?

12 A. No. Initially it was 83. That's what my
13 testimony was about. Initially, when the TVM
14 standards were issued, it was one amongst 83 and that
15 was back in 2007. So now there have been other NERC
16 standards and many, many upgrades of standards.

17 Q. Fair enough. We'll talk about that and
18 we'll get into all of the other stuff you talked
19 about before, sir.

20 These standards include standards for
21 transmission vegetation management, right?

22 A. The TVM standards do, yes.

23 Q. And the transmission vegetation
24 management standards apply to wires 200 kV and above,
25 as you mentioned a little bit ago, correct?

1 A. That's right. With some exceptions for
2 lower-voltage lines under certain criteria.

3 Q. Right. And you do realize that the
4 transmission wires in this case are 138 kV.

5 A. That's correct.

6 Q. And so, the standards don't apply to
7 those transmission wires.

8 A. That's correct.

9 Q. And the wires in this case do not meet
10 any of the exceptions you just alluded to, correct?

11 A. That's correct.

12 Q. And there are also other standards
13 relating to other issues regarding vegetation
14 management, correct?

15 A. Yes.

16 Q. And those other standards you just said
17 specifically do apply to 100 kV; so NERC made the
18 concerted effort to not have the TVM apply to 138 kV,
19 correct?

20 A. That's correct.

21 Q. Let's turn to page 3 of your testimony.
22 I'm looking at lines 10 through 13, sir. Isn't it
23 true that you have no -- you're merely speculating
24 about what may or may not happen in the future. You
25 don't have a crystal ball, correct?

1 A. That's correct.

2 Q. And isn't it true, as you point out
3 earlier, that the NERC standards were originally
4 issued in 2017 -- or, 2007?

5 A. 2007, correct, the original.

6 Q. So they've been revised. You keep using
7 the word "original." It's fair that they've been
8 revised.

9 A. Revised, yes. In 2007, it was FAC-003-1.
10 There had been a "dash 0" but it had not gone into
11 effect. It was out there for comment and people
12 would see what standard was coming. FAC-003-1 was
13 the first formal standard. It is now FAC-003-4. So
14 it has been revised a number of times.

15 Q. Right. There are multiple versions and
16 the 04 version is the one in effect today.

17 A. Correct.

18 Q. And so, in more than a decade since the
19 standards originally went into effect, 11 years to be
20 precise, they have not applied the TVM to lines of
21 less than 200 kV, correct?

22 A. That's correct.

23 Q. And "TVM" is "transmission vegetation
24 management"? We're on the same page?

25 A. Yes, yup, that's correct, you got it.

1 Q. And the NERC standards, specifically the
2 FAC-003-4 that you just referenced, that standard
3 sets out minimum vegetation clearance distances,
4 correct?

5 A. That's correct.

6 Q. And those distances depend on the
7 voltage, right?

8 A. Yes.

9 Q. And it also depends on the elevation
10 above sea level, correct?

11 A. Correct.

12 Q. And for the 138-kV lines at issue in this
13 case, you would say that elevation is likely below
14 the 500 feet, correct?

15 A. I believe it was, yes.

16 Q. And under FAC-003-4, the minimum
17 clearance distance set by NERC to be maintained is
18 the 2.3 feet.

19 A. That's correct.

20 Q. And that's for 200-kV lines and above.

21 A. No, that's --

22 Q. I'm sorry, strike that.

23 A. That's the 138. It's for 138.

24 Q. It's 2.3 for 138-kV lines.

25 A. Correct.

1 Q. And later in your testimony on page 4,
2 lines 16 through 17, you state that failure to adhere
3 to the NERC standards can result in a fine up to
4 \$1 million per day for a utility; is that right?

5 A. That's correct.

6 Q. But again, Mr. McLoughlin, the lines at
7 issue in this case are not subject to the FERC
8 standards so, therefore, Duke would not be subject to
9 that \$1 million fine, correct?

10 A. That's correct.

11 Q. Let's turn to page 5 of your testimony,
12 sir. On page 5, line 16, here you begin to discuss a
13 2011 snowstorm, correct?

14 A. Correct.

15 Q. And you quote from a Staff Report; is
16 that correct?

17 A. That's correct.

18 Q. And just so the record is clear, that
19 Staff Report that you quote from is now attached to
20 your testimony as Attachment 1.

21 A. Correct.

22 Q. And this Staff Report is regarding an
23 event that occurred in October 2011, correct?

24 A. Correct.

25 Q. And you have never worked at FERC or on

1 FERC Staff, have you, sir?

2 A. No, ma'am.

3 Q. You've never worked on or at or for
4 NERC; is that correct?

5 A. That's correct.

6 Q. And you've never worked for the Staff of
7 either FERC or NERC either.

8 A. That's correct.

9 Q. And one of the quotations you reference
10 in your testimony is from the report which states
11 that the Staff of the FERC recommends "'where
12 possible and practical, utilities implement the
13 industry best practice of ensuring that danger trees
14 are not present within their full rights-of-way'"; is
15 that correct?

16 A. Correct.

17 Q. And to be clear, the phrase "danger tree"
18 comes from the report attached to your testimony.

19 A. That's correct.

20 Q. And according to that report, a "danger
21 tree" is defined as any tree that, if it fell, could
22 contact a transmission line, correct?

23 A. Correct.

24 Q. So it would follow that not all trees in
25 a right-of-way would qualify as danger trees.

1 A. That's true.

2 Q. Healthy trees would not be danger trees,
3 correct?

4 A. If it was tall enough to contact it if it
5 fell. It doesn't have to be a hazard tree or in poor
6 physical condition. Simply tall enough that if it
7 fell towards the line, it would either strike the
8 line or be so close as to draw an arc.

9 Q. Well, a tree that could not fall into the
10 transmission wire, due to its height or proximity to
11 the wires, would not be a considered danger tree,
12 correct?

13 A. If the tree was so short, that's correct.
14 If it was well below the conductors at this stage in
15 time. In other words, it hasn't -- a White Pine
16 that's 25-feet tall and the wire is 50, obviously it
17 would not hit the conductors. Now, 10 years from
18 now, when that White Pine is much taller, it could
19 hit the conductors.

20 Q. But it also depends -- you do realize the
21 right-of-way is about 100-feet wide, correct?

22 A. Total width is 100 feet, that's correct.

23 Q. So it also would depend on the proximity
24 of the tree within that right-of-way.

25 A. Correct. Again --

1 Q. Let's be clear, your example you just
2 gave was when the tree was underneath --

3 A. No, no, no.

4 Q. -- the wires and it could grow up into
5 the wires.

6 A. There is a grow-up condition, but the
7 danger trees are trees that fall in from within the
8 right-of-way. So a tree, it would have to be tall
9 enough on the edge of the right-of-way to fall into
10 the conductors to be a danger tree; otherwise,
11 they're called "grow-ins" and they're from underneath
12 the conductors.

13 There's also the situation of a grow-in
14 from the edge of the right-of-way, from a tree that
15 is actually off the right-of-way that can actually
16 grow into the conductors. So there's a number of
17 conditions there which pose a threat to the lines.

18 Q. Right, there are a number of factors.
19 You have to consider the height of the tree, the
20 growth rate of the tree, you also have to consider
21 the health of the tree, and then you also have to
22 consider the proximity within the right-of-way of the
23 tree, correct?

24 A. All those things are factors, that's
25 correct.

1 Q. A tree that's 25-feet tall, that is
2 50-feet away from the nearest wire, is not going to
3 be able to fall into the wires, correct?

4 A. Obviously.

5 Q. Could you look at page -- let's turn to
6 this snowstorm report that you attach, Attachment 1.

7 First of all, the report occurred not in
8 Duke's territory, correct?

9 A. Correct.

10 Q. And the report is from 2011, correct?

11 A. From an event that occurred then, that's
12 right.

13 Q. From one event.

14 A. A major snowfall event.

15 Q. And this snowstorm event did not even
16 occur in Ohio, correct?

17 A. That's correct.

18 Q. Did you visit the site of the snowstorm,
19 sir?

20 A. I happened to be over there in New
21 England, just after the snowstorm, on another
22 transmission project and actually saw some of the
23 damage that occurred.

24 Q. But, sir, were you there during the
25 outage event that is the genesis for this report?

1 A. No.

2 Q. Thank you.

3 And you were not hired by NERC or FERC to
4 do any consulting on this event.

5 A. No.

6 Q. And you did not contribute in any way to
7 the report that was written that's attached to your
8 testimony.

9 A. That's correct.

10 Q. And you were not and nobody under your
11 direction contributed or was an author to any
12 sections of this report, correct?

13 A. That's correct.

14 Q. We're going to turn to page 29 of the
15 report, please. Are you there?

16 A. Correct, I'm there.

17 Q. On this page, the report notes that the
18 only tree that cause an outage during this whole
19 snowstorm event was on a 345-kV line and was a
20 65-foot-tall tree inside the right-of-way; is that
21 correct?

22 A. I'm looking for that.

23 I believe that means the only tree-caused
24 345-kV-line outage. There were other outages but
25 that was the only 345.

1 Q. Right. The only tree-caused 345 outage.
2 I said 345 in my question, right?

3 A. Yes.

4 Q. The only outage on the 345 line was
5 caused by a 65-foot tree, correct?

6 A. Correct.

7 Q. So it's not the case that the report
8 cites trees that are only 15-feet tall in the
9 right-of-way; is that correct?

10 A. Correct.

11 Q. Mr. McLoughlin, is it fair to say that
12 you did not take any of the pictures attached to this
13 report?

14 A. That's correct.

15 Q. Sir, do you know what BES means?

16 A. Bulk Electric System.

17 Q. And you were not hired to consult on the
18 Bulk Electric Systems involved in this incident, were
19 you?

20 A. No.

21 Q. Let's turn to page 6 of your testimony,
22 sir. If you look at line 12.

23 A. Uh-huh.

24 Q. I'm now on page 6 of your testimony. On
25 line 12 of your testimony there's a Question and

1 Answer, and here you're discussing Duke's right to
2 conduct vegetation management; is that correct?

3 A. That's correct.

4 Q. And there you state that Duke has a right
5 to remove trees "which the Company's engineers or
6 other professionals responsible for vegetation
7 management believe may endanger the safety,
8 reliability and maintenance of the transmission lines
9 and equipment"; is that correct?

10 A. That's correct.

11 Q. And for the record, you're not a lawyer,
12 correct?

13 A. Correct.

14 Q. And which easements, in this case, did
15 you review?

16 A. I looked at a number of easements and
17 they're all very similar in their language, so I felt
18 that most of them must be likewise. I did not review
19 all the easements, but there were a number of them
20 that I looked at.

21 Q. And you believe the easements contain the
22 language that you cite on page 6 of your testimony?

23 A. That's correct. In general.

24 MS. BOJKO: Your Honor, at this time, I'm
25 going to refer to, let me see if I can get this right

1 today. I'm going to refer to Complainants Exhibit 5
2 which is the Attachment A to Mr. Grossi's testimony.
3 Attachment A to Exhibit 5.

4 Do we still have a stack of exhibits?

5 May I approach, Your Honor?

6 Let the record reflect that I handed the
7 witness what's been previously marked as Complainants
8 Exhibit 5, Attachment A.

9 Q. Does this appear to be an easement --

10 EXAMINER SANYAL: One moment, Ms. Bojko.
11 Is it Joseph Grossi?

12 MS. BOJKO: Yes, ma'am.

13 EXAMINER SANYAL: And it's Attachment --

14 MS. BOJKO: A.

15 EXAMINER SANYAL: -- A. Got it. Thank
16 you. Please move on.

17 Q. (By Ms. Bojko) Does this appear to be an
18 easement for a property?

19 A. Yes.

20 Q. Is this one of the easements that you
21 reviewed, sir?

22 A. I couldn't be certain.

23 Q. If you look at the language under the
24 stamps, the rectangle boxes in the middle.

25 A. Uh-huh.

1 Q. Do you see that? Isn't it true that it
2 says "together with the right to cut, trim or remove
3 any trees, overhanging branches or other obstructions
4 both within and without the limits of the above
5 described right of way and easement which in the
6 opinion of the grantee's engineers may endanger the
7 safety of or interfere with the construction,
8 operation or maintenance of the system...." Do you
9 see that?

10 A. Yes, I do.

11 Q. Is the language "or other professionals
12 responsible for vegetation management" contained in
13 this document?

14 A. No, it is not.

15 Q. Let's turn to Attachment A. Could you
16 look at what has previously been marked Complainants
17 Exhibit 16, Attachment A to Mr. Vonderhaar's
18 testimony?

19 MR. McMAHON: Your Honor, if I may? If
20 this might help move this process along, the Company
21 is happy to stipulate that the phrase "or other
22 professionals responsible for vegetation management"
23 is not found in any of the Company's easements that
24 have already been introduced into the record.

25 EXAMINER SANYAL: Ms. Bojko.

1 MS. BOJKO: Well, Your Honor, we'll take
2 that stipulation, but I'm not going to cut my cross
3 short to -- I mean, this goes to the credibility of
4 the witness and the credibility of his testimony.

5 MR. McMAHON: The easement rights are
6 what the easement rights are. The witness has
7 testified about his understanding of the Company's
8 rights, and we don't need to debate whether certain
9 language is reflected in the body of the easement.

10 MS. BOJKO: Your Honor --

11 MR. McMAHON: It's not relevant for
12 today.

13 MS. BOJKO: -- this is the exact reason
14 why we moved to strike the language because he's
15 asserting that the easement language says one thing,
16 and it doesn't say what he's asserting. So I have to
17 be able to challenge the testimony that he has
18 written on the document, unless you want to move to
19 strike -- unless you want to strike now.

20 EXAMINER SANYAL: I would be willing to
21 strike the other -- "or other professionals" language
22 if that would be amenable to you.

23 MS. BOJKO: If his testimony is going to
24 be officially amended, Your Honor, to remove "legal"
25 on line 15, and now to remove "or other professionals

1 responsible for vegetation management," then we can
2 do that.

3 EXAMINER SANYAL: Okay. I think we
4 already previously took out the word "legal," and I
5 think Mr. McMahon has just stated that he is okay
6 with taking out that language beginning with "or
7 other professionals" and ending with "vegetation
8 management."

9 MR. McMAHON: Yes, Your Honor.

10 EXAMINER SANYAL: Okay. Well, let's go
11 ahead and strike those words out.

12 MS. BOJKO: Thank you, Your Honor.

13 EXAMINER SANYAL: Okay. And you may
14 proceed.

15 MS. BOJKO: Thank you.

16 Q. (By Ms. Bojko) Mr. McLoughlin, is it fair
17 to state that the language included on your testimony
18 on 6 is not quoted from easements that you may have
19 reviewed?

20 A. Obviously not, but it's the
21 interpretation of the Company, back in 1952,
22 "engineers" was a very broad term. Many people were
23 called "engineers." Now we have professional
24 foresters doing what engineers used to do, they're
25 more qualified, so that's why -- that's why that

1 language was probably added.

2 MS. BOJKO: Your Honor, I move to strike
3 everything after he answered my question of whether
4 it was fair to say that he did not quote from any
5 easements that he reviewed.

6 EXAMINER SANYAL: I'm going to deny the
7 motion. He was just giving you his impression on how
8 he answered that question, so we will move on.

9 Q. So you're not a Duke employee; is that
10 correct?

11 A. That's correct.

12 Q. And you weren't in 1952.

13 A. No.

14 Q. And you didn't write the easements, did
15 you?

16 A. No.

17 Q. And do you understand that the easements
18 have a legal significance?

19 A. Yes.

20 Q. And do you understand that the easements
21 have not changed since 1952?

22 A. That's correct.

23 Q. And do you understand that those are
24 still binding legal documents?

25 A. That's correct.

1 Q. And do you understand that Duke's
2 interpretation of those binding legal documents may
3 or may not be correct?

4 A. That may be the case.

5 Q. And you are not a lawyer, right?

6 A. That's correct.

7 Q. And so, your statements were clearly from
8 Duke and are hearsay; is that correct?

9 MR. McMAHON: Objection.
10 Mischaracterizing the witness's testimony and
11 argumentative.

12 EXAMINER SANYAL: I agree. Rephrase that
13 question. I don't think he can answer as to what is
14 hearsay.

15 Q. That was a statement that you heard, out
16 of court, by Duke; is that correct?

17 MR. McMAHON: Objection. The witness has
18 testified that he reviewed various easements, and
19 we've already amended or stricken certain language
20 from his testimony to reflect that he's not offering
21 a legal opinion. Ms. Bojko is just wasting our time
22 on irrelevant testimony right now.

23 EXAMINER SANYAL: I will let the witness
24 answer very briefly as to what he thinks the answer
25 to Ms. Bojko's question is.

1 A. It was my interpretation that easements
2 have evolved in the sense that the language has to be
3 interpreted today, 70 years later, what they actually
4 meant 70 years ago. So "engineers" was a nice
5 generic term for anybody that worked for the Company.
6 Now we have real professionals -- foresters,
7 arborists -- that are doing the work that these
8 engineers are relegated to in the document and,
9 hence, that's why it was my interpretation what's
10 actually happening today.

11 MS. BOJKO: That wasn't my question, Your
12 Honor, so I do move to strike that response. I asked
13 him if he heard the 1952 historic information from
14 Duke, not -- I did say "out-of-court statement."
15 I'll revise that.

16 Q. Did you hear about that history from
17 Duke, from a Duke employee?

18 A. It's in many cases. I don't know where
19 I've heard it. But again, I'm using my -- somewhat
20 my own interpretations of old documents.

21 Q. So you didn't hear that these easements
22 were established in 1952 --

23 A. I did, yes.

24 Q. -- from a Duke employee?

25 A. That's -- I was given this from a Duke

1 employee, of course.

2 Q. Okay. So, sir, are you suggesting that
3 there were no arborists in 1952?

4 A. There could be none of them, that's
5 correct.

6 Q. You don't think there were arborists in
7 1952?

8 A. There were, but they may not be working
9 for the Company.

10 Q. Right. And do you think there were
11 foresters in 1952?

12 A. Of course there were foresters, but not
13 working -- not many working for utility companies at
14 that time.

15 Q. That wasn't my question. You said there
16 weren't foresters or arborists that existed in 1952,
17 and I'm asking --

18 MR. McMAHON: Objection. That is
19 absolutely not what the witness said.

20 EXAMINER SANYAL: I will let Ms. Bojko
21 ask the question and see what the witness responds
22 to.

23 MS. BOJKO: I'll rephrase the question,
24 Your Honor.

25 EXAMINER SANYAL: Thank you.

1 Q. Do you believe, in 1952, arborists and
2 foresters existed?

3 A. They existed generically. Whether they
4 were actually existing at Duke or the predecessor of
5 Duke Power here, Cleveland Electric or whoever,
6 probably not.

7 Q. You don't know because you weren't --

8 A. I don't know, but I've been in the -- I
9 was one of the first foresters hired in 1973 by a
10 utility in New York State. There weren't a lot of
11 us, at the time, hired by utilities in the '50s, the
12 '60s. It wasn't until the environmental movement of
13 the late '60s, early '70s, that hiring of foresters
14 and other arborists to do tree work was becoming more
15 commonplace.

16 Q. I'm sorry, sir, that's not what I asked.
17 I didn't ask if utility companies had -- you were --
18 you were hired, in the '70s, by a utility company to
19 be a utility company employee; is that correct?

20 A. That's correct.

21 Q. My question was: Do you believe that the
22 profession of arborists and foresters existed --

23 A. Certainly.

24 Q. -- in 1952?

25 A. Certainly.

1 Q. And you believe that those professionals
2 were and could have been hired to trim trees,
3 correct?

4 A. They may have been. But I'm referring to
5 the word "engineers" here and that was a generic
6 word, used by utilities, for any electrical, civil,
7 and many other people, maintenance engineers,
8 right-of-way engineers. They had terms using
9 "engineer" for any job description.

10 In fact, my first job description was
11 "environmental engineer" because there wasn't a
12 forester, there wasn't an -- so they ended up calling
13 us "environmental engineers" to add to the list of
14 civil, mechanical, nuclear, electrical, et cetera.

15 Q. Okay. You keep saying there wasn't any
16 and you're talking about there weren't any arborists
17 or foresters that were hired in house by the utility
18 company, right?

19 A. Probably not and that's why they used the
20 term "engineer."

21 Q. Okay.

22 A. Today, instead of engineers making these
23 decisions, arborists, foresters, other professionals
24 are making these decisions.

25 Q. And you have no idea when Duke would have

1 hired an internal arborist or forester; is that
2 correct?

3 A. No.

4 Q. And you have no idea whether Duke's
5 predecessor -- obviously Duke wasn't in existence
6 back then -- Duke's predecessor, you have no idea
7 whether Duke's predecessor had contracted for an
8 arborist and a forester, correct?

9 A. Correct.

10 Q. And you also have no idea whether Duke or
11 Duke's predecessor contracted with an entity like
12 Integrity, a tree-trimming company, that would have
13 had an arborist or a forester on staff, correct?

14 A. That's correct.

15 Q. Thank you.

16 Okay. Sir, you stated that you believe
17 that Cincinnati Gas & Electric, or the predecessor
18 even before that one, I can't remember the name, you
19 believe that that predecessor of Duke did not have
20 arborists or foresters on staff, correct?

21 MR. McMAHON: Objection. Asked and
22 answered --

23 A. Yeah.

24 MR. McMAHON: -- multiple times.

25 EXAMINER SANYAL: I agree. I think you

1 made it quite clear as to the status of arborists
2 during the '50s. I think the record is replete
3 with answers from the expert.

4 MS. BOJKO: I didn't know we talked
5 specifically about the Company. Okay, I'll move on.

6 EXAMINER SANYAL: Let's move on.

7 Q. (By Ms. Bojko) Mr. McLoughlin, do you --
8 you have Attachment A in front of you from
9 Mr. Vonderhaar's testimony which was Complainants
10 Exhibit 16?

11 A. Yes.

12 Q. Okay. And is this one of the easements
13 that you reviewed?

14 A. It could have been. I looked at a number
15 of them.

16 Q. Could you turn to page 3 of this
17 document?

18 A. I only have one page.

19 Q. No. It's the other easement that I gave
20 you.

21 THE WITNESS: This one here?

22 EXAMINER SANYAL: Yes.

23 MS. BOJKO: Yes.

24 Q. Do you have it, sir?

25 A. This is the letter from Cincinnati Gas &

1 Electric?

2 Q. Yes. Did you review this, sir? It's a
3 letter, from 1977, describing a right-of-way.

4 A. I don't believe I saw this before. I
5 can't recall.

6 Q. So you're not opining on the contents of
7 this letter?

8 A. No.

9 Q. And you're not making any expert opinions
10 about this letter?

11 A. No.

12 Q. Or the contents contained therein?

13 A. Not at this time.

14 Q. If we could turn to page 7 of your
15 testimony, please.

16 EXAMINER SANYAL: Ms. Bojko, if you are
17 turning to a slightly different line of questioning,
18 I was wondering if I could take a brief 2-minute
19 break. I drank a lot of coffee today. I just need
20 to run to the restroom.

21 MS. BOJKO: Call that a personal health
22 break.

23 EXAMINER SANYAL: Thank you.

24 Let's go off the record.

25 (Recess taken.)

1 EXAMINER SANYAL: Let's go back on the
2 record.

3 Ms. Bojko, you may proceed with cross
4 whenever you are ready. I believe we are on page 7.

5 MS. BOJKO: Thank you, Your Honor.

6 Q. (By Ms. Bojko) Mr. McLoughlin, on page 7
7 you use the term "flashover events"; is that correct?

8 A. That's correct.

9 Q. And, sir, you believe that flashover is
10 the same thing as arcing; is that correct?

11 A. That's correct. It's another term.

12 Q. That mean the same thing?

13 A. That is correct. I believe so.

14 Q. Well --

15 A. "Arcing" is an electrical term for many
16 different electrical phenomena. Whereas, "flashover"
17 I've heard mainly referred to power lines flashing
18 over. So there's a slight difference, but people use
19 them interchangeably.

20 Q. So are they the same thing or slightly
21 different?

22 A. For my point of view, they're basically
23 the same thing.

24 Q. Well, sir --

25 A. Somebody may differ with me on that, but

1 I look at them as basically the same phenomenon.

2 Q. Sorry, who may differ with you on that?

3 A. Some people may differ because there's
4 arcing used in electrical manufacturing of equipment
5 and things, they may not call that a flashover.

6 Q. Well, isn't it true, sir, there are
7 different kinds of events that occur on electrical
8 transmission lines?

9 A. Certainly.

10 Q. And one of them is an arcing event and a
11 separate one is a flashover event.

12 A. Well, again, arcing, that's what I'm
13 saying, some people look at it as an electrical
14 phenomenon. Arcing up the insulator, for instance.
15 Whereas, a flashover would be hitting something below
16 the line, an underbuild or a tree. But I've heard
17 the terms used interchangeably. And the way I look
18 at it, from a tree standpoint, they're one and the
19 same. That's how I look at it.

20 Q. Isn't it true, sir, that an arcing event
21 on a transmission line is a current that runs through
22 the transmission line and makes a direct contact with
23 an object off of the transmission line?

24 A. Sounds reasonable, yeah.

25 Q. And isn't it true that a flashover,

1 however, is a short on an electric line that produces
2 air between exposed conductors and another object,
3 and is more of an explosive event not a direct
4 current?

5 A. Well, yes, a flashover that I'm -- that's
6 the term I usually use, is through the air from the
7 line to the tree.

8 Q. So are you --

9 A. But I've seen some people use the term
10 "arcing" also to mean through the air but, yeah, it
11 usually occurs when the two touch, an arc occurs.

12 Q. So --

13 A. I'm not an electrical engineer. I'm
14 simply looking at these phenomena as a forester.

15 Q. So in your testimony on page 7, are you
16 still, with those definitions, talking about a
17 flashover event or are you talking about an arcing
18 event?

19 A. Flashover.

20 Q. And, sir, a flashover is not a direct hit
21 as we've just established, correct?

22 A. A direct hit?

23 Q. Of electric current.

24 MR. McMAHON: Objection to the form.

25 EXAMINER SANYAL: Could you elaborate?

1 MR. McMAHON: "Direct hit" meaning
2 physical contact or "direct hit" from the current
3 through the air? They're two different things.

4 EXAMINER SANYAL: Ms. Bojko, would you
5 rephrase the question?

6 MS. BOJKO: Sure.

7 Q. (By Ms. Bojko) I thought we just
8 established that an arcing was a direct hit of the
9 electrical current to an object off of the wires, and
10 I was asking in the context of your testimony are you
11 referring to that or are you referring to a flashover
12 which is a different definition?

13 A. Right. I'm looking through the air at
14 this point. We're looking at grow-ins, the distance
15 of the tree to the wire, and a flashover from the
16 conductor to the tree to the ground.

17 Q. So you're talking about more of an
18 exposed conductor that has a short circuit and the
19 contact is made from more of an explosive kind of
20 contact.

21 MR. McMAHON: Objection.
22 Mischaracterizes his testimony.

23 MS. BOJKO: Your Honor, I don't think his
24 testimony is clear, that's why I'm asking the
25 questions to determine which event he's talking about

1 that he goes on at length and talks about.

2 EXAMINER SANYAL: I'll let the witness
3 answer and --

4 A. Basically I'm talking about trees that do
5 not have to come physically into contact with the
6 line, a flashover occurs. Normally that flashover is
7 an explosive event. I haven't seen one that wasn't.

8 Q. Well, let's turn to page 16 of your
9 testimony. First of all, you didn't take this
10 picture, did you, sir?

11 A. I did not.

12 Q. And you did not witness this event, did
13 you, sir?

14 A. No, I did not.

15 Q. And you don't have any idea where this
16 event occurred, do you?

17 A. No.

18 Q. And you don't know if this was a 138-kV
19 line, do you?

20 A. No.

21 Q. And you have no idea if this was a
22 distribution facility or transmission facility.

23 A. I would -- no, I don't know exactly, but
24 I would think it would be transmission from the
25 amount of energy coming off the line, but . . .

1 Q. But you don't know that.

2 A. No.

3 Q. You don't --

4 A. I have witnessed three -- three different
5 occurrences of flashovers and this is what I saw.

6 Q. This is what you saw?

7 A. Yes, yes.

8 Q. The direct current that goes from the
9 line to the tree which is an arcing event?

10 A. It was a flashover event that I saw,
11 where the energy came down the tree and hit the
12 ground and exploded the tree.

13 Q. Is this a direct current going from --

14 A. I can't tell.

15 Q. -- the line to the tree?

16 A. I cannot tell by this picture.

17 Q. So you don't know whether this picture is
18 a flashover or an arcing event, correct?

19 A. Whether the tree is in contact with the
20 line physically or whether it's a few feet away from
21 the line, no, but the event is the same.

22 Q. Well, there are two different events: A
23 flashover event and an arcing event. It's not the
24 same, correct?

25 MR. McMAHON: Objection. The witness has

1 explained his understanding and use of the terms.

2 EXAMINER SANYAL: I agree. I think the
3 witness has made clear that he's using the terms
4 interchangeably. If you need further clarification,
5 I would ask you to ask that question again.

6 MS. BOJKO: Your Honor, this witness is
7 testifying as an expert and he's not using the
8 terminology in the industry. I have the opportunity,
9 on cross-examination, to challenge his claim to be an
10 expert. I tried to move to strike this testimony and
11 I was denied, so now I should be allowed to test the
12 credibility of this witness to determine the internet
13 picture that he posted, whether he knows for a fact
14 that it's an arcing event or a flashover event.
15 They're defined differently. Industry experts use
16 them differently. He's claiming to be an industry
17 expert, so I have the right to challenge his
18 credibility and that's what I'm doing.

19 EXAMINER SANYAL: I think he's already
20 explained, in his testimony, he's using the words
21 interchangeably. Why don't you go -- I think if you
22 ask the previous question again and give him an
23 opportunity to describe what he gathered from this
24 picture, I think it will become clear, so go ahead.

25 Carolyn, could you read Ms. Bojko's

1 previous question again.

2 (Record read.)

3 EXAMINER SANYAL: And then,
4 Mr. McLoughlin, could you provide an answer to that
5 question?

6 THE WITNESS: Well, I do use the two
7 terms interchangeably and I've seen other people use
8 them interchangeably. Probably, technically, if a
9 tree lands on a conductor, then it makes a direct
10 contact to ground, there's no arcing, per se. If a
11 tree is a few feet away from the conductor and an arc
12 occurs, it's through the air.

13 The event is the same whether it's a --
14 that's why you have to -- NERC looks at both these
15 events the same. A grow-in or a fall-in from inside
16 the right-of-way, both will cause the line to ground
17 fault, either event. The tree is touching it or
18 grows close to the conductor and there's a flashover.
19 Either one of those events are reportable in the same
20 fashion.

21 Q. (By Ms. Bojko) Okay. You're not
22 disputing that there may be different definitions --

23 A. No, no.

24 Q. And you're also not disputing that many
25 people in the industry may think they're different

1 actual events, correct?

2 MR. McMAHON: Objection. Foundation.
3 She's arguing about what other people in the industry
4 think.

5 EXAMINER SANYAL: I think he can answer
6 the question.

7 A. Other people may think differently, but I
8 used them somewhat interchangeably for regulatory
9 purposes and for what goes on out on the lines.
10 There is a line to ground fault. Sometimes it's a
11 flashover, sometimes we want to refer to it as an arc
12 if the trees make contact, but the event appears to
13 be the same. A line to ground fault that is a very
14 eruptive situation like a lightening bolt.

15 Q. You're saying the result is the same even
16 though there might be different events that cause it.
17 Is that what I'm understanding from your testimony?

18 A. One was through the air and one is
19 through direct contact, that's correct, but the
20 result is the same.

21 Q. And you don't know what exactly happened
22 in this picture, whether it was arcing or a
23 flashover, correct?

24 A. I don't know but it looks just like what
25 I saw.

1 Q. Okay. And just so the record is clear,
2 you pulled this off the internet?

3 A. That's correct. It's for illustrative
4 purpose, trying to describe -- add a little
5 illustration to the words I used to describe this
6 event.

7 Q. Let's look at your testimony on page 8,
8 okay? Here you're talking what you just stated
9 you've witnessed, what you're calling a flashover,
10 correct?

11 A. That's correct.

12 Q. And what you've witnessed is on a 115-kV
13 line or 230-kV line, correct?

14 A. Correct.

15 Q. And that witness that you did, one was in
16 the 1970s; is that correct?

17 A. That's correct.

18 Q. And the other witness that you did is in
19 the 1990s?

20 A. Early 1990s, that's correct.

21 Q. So 20 years apart about?

22 A. Probably about 15 years apart. Late '70s
23 to early '90s.

24 Q. Okay. And you're saying, in both of
25 those instances, the vegetation was only 5 feet of

1 clearance, correct?

2 A. The requirement on the 115 line was
3 5 feet and I measured it to be 7 or 8. It was a
4 research study area that we were going to use
5 techniques on high-density, high-height vegetation.
6 The crews had not got there yet to do the work, were
7 behind schedule, and the company that we were doing
8 the work on their right-of-way thought that the trees
9 might be getting too tall. They asked me to go out,
10 measure it, make sure that there was no threat to the
11 lines.

12 Q. Okay. I'm sorry, in your testimony on
13 line 9, you said it was 5 feet. Now you're saying
14 you measured it to be 7 and 8 feet?

15 A. Well, there was over 5 feet.

16 Q. Okay.

17 A. The 5 feet was the minimum.

18 Q. I thought this was a measurement. Was it
19 measured or --

20 A. Let me find that.

21 Q. -- are we talking about a minimum
22 standard?

23 A. Where is this on the --

24 Q. Line 9.

25 A. Line 9. "Over 5 feet." I used "over

1 5 feet."

2 Q. It was a measurement though.

3 A. Yes.

4 Q. Not a standard.

5 A. Yes.

6 Q. Okay.

7 A. It was well over 5 feet which was the
8 minimum for the 115 lines.

9 Q. So, sir, where did these occur?

10 A. In Upstate New York.

11 Q. Both of them?

12 A. Yes.

13 Q. On line 15, you discuss another instance
14 of a flashover event. Is this the third one you said
15 you've seen?

16 A. This is the -- no. This is the one
17 that -- that was brought to my attention by the
18 company and by the landowner.

19 Q. Right. This is the one you didn't
20 witness, correct?

21 A. I did not witness.

22 Q. And this one you have no personal
23 knowledge of. This is the one where you talked to
24 company employees and the landowner after the fact,
25 correct?

1 A. That is correct.

2 Q. And this one happened in New York as
3 well?

4 A. Yes.

5 Q. And this one occurred in the 1990s?

6 A. Yes.

7 Q. And this one was on a 345-kV line?

8 A. Correct.

9 Q. And what was the distance between the
10 power line and the tree?

11 A. That was unknown. The company had been
12 trimming the tree annually every year for this
13 landowner as the tree was right in his front yard, so
14 every year they trimmed it back to the same level.
15 What happened, multiple stems kept growing, and we
16 now know that's more conducive to the conduction of
17 electricity when you have multiple stems, through
18 more recent studies. It was not known at the time.

19 Q. Thank you.

20 A. One day, while the landowner was out,
21 there was a flashover through the tree, into the root
22 system, through a metal pipe, into the house, and it
23 actually blew out the bathroom.

24 MS. BOJKO: Your Honor, I move to strike
25 everything after "It was not known at the time." He

1 said that twice in two different sections. I didn't
2 ask him anything else about the situation. I asked
3 him what was the distance between the power line and
4 the tree.

5 EXAMINER SANYAL: I'm going to grant it.

6 MS. BOJKO: Thank you.

7 Q. And again, you were not a witness to the
8 flashover event or the result, correct?

9 MR. McMAHON: Objection. Asked and
10 answered.

11 A. Correct.

12 EXAMINER SANYAL: Overruled.

13 Q. Okay. Mr. McLoughlin, can we turn to
14 page 19 of your testimony, please, sir?

15 A. Certainly.

16 Q. Wait, before we move on, just one more
17 clarification. You state that you -- is it fair --
18 since you state in your time working as a forester
19 and a consultant that you've only witnessed a few of
20 these events, three to be specific --

21 A. Three.

22 Q. -- from 1970, to date, is it fair to say
23 that the occurrence of a flashover event is rare?

24 A. It's getting rare because of the NERC
25 standards but previously it had happened fairly

1 routinely.

2 And there's two different types of, if
3 you will, concerns about flashovers. One is the type
4 that is persistent that leads to a sustained outage.
5 The other is a transient in which a small, spindly
6 tree is blown up. It no longer presents a threat and
7 the line remains on. It doesn't short out, the
8 breakers don't -- don't operate, so there is no
9 sustained outage. It's a transient or an
10 instantaneous outage.

11 So there's two different types. So, of
12 the first, there were a lot of those of the type that
13 is instantaneous. Fewer of the type that were
14 prolonged or sustained.

15 With the NERC standards, on all lines
16 above 200, they are becoming a very real rarity
17 because you have to check out every, every hit on the
18 line. Even if it's instantaneous, it must be checked
19 out and, if it is a tree, it is a violation of the
20 NERC standards. So even the instantaneous ones are
21 getting rare now.

22 Q. Okay. And the two you witnessed were in
23 the 1970s and 1990s, and when was the third one?

24 A. The two were in the '70s and one was --
25 excuse me. Two in the '90s and one in the '70s.

1 Q. I'm sorry, I misread your testimony. All
2 three events then happened before the NERC standards
3 became in effect in 2007.

4 A. That's correct.

5 Q. And you haven't witnessed any since 2007,
6 correct?

7 A. No, I have not witnessed any.

8 Q. And if we -- let's go to page 17 of your
9 testimony. I think it's fair to say that because you
10 told me that you have never worked around electric
11 lines, cutting trees, that this is not a picture of
12 yourself, correct?

13 A. No.

14 Q. And I think it's fair to say that you
15 didn't take this picture; is that correct?

16 A. Correct.

17 Q. And this is another photo you just pulled
18 off the internet, correct?

19 A. For illustrative purposes, correct.

20 Q. You have no idea where this was taken.

21 A. No.

22 Q. You have no idea who the individual is
23 who is doing it.

24 A. No.

25 Q. You have no idea if he works for a

1 utility company or if he is an independent arborist,
2 correct?

3 A. No. It just represents typical type of
4 line work, taking limbs off trees, trimming or
5 pruning trees.

6 Q. And you're not making any kind of
7 statements about whether he is doing it correctly or
8 not, correct?

9 A. No.

10 Q. And you have no idea how often companies
11 do it in this fashion.

12 A. No.

13 Q. Okay. Let's turn to the next page, page
14 18. Is it fair to say, as with the other photographs
15 in your testimony, this is not a picture that you
16 personally took?

17 A. That's correct.

18 Q. And you pulled this picture off the
19 internet as well.

20 A. That's correct.

21 Q. And you don't know whether this is
22 transmission or distribution related.

23 A. No. It simply shows a topped tree. This
24 is what happens when you have a tree directly
25 underneath a power line. What typically has to

1 happen is the tree has to be topped off at a certain
2 level and, after a number of toppings, this is what
3 your result is.

4 Q. And you have no idea how close to the
5 wire lines this actually is. Pictures are --

6 A. No.

7 Q. -- deceiving.

8 And you have no idea if that's a
9 distribution line. It's along a street. One might
10 assume that's not a transmission line; is that fair?

11 A. That's fair.

12 Q. And the wires seem to be pretty low, so
13 it's likely distribution facilities, correct?

14 A. It could be, that's correct.

15 Q. And that's not what we're talking about
16 in this case, correct?

17 A. Well, the distances of a 138 line, at low
18 clearance, would result in a tree like this.

19 Q. But we don't know if this is a 138-kV
20 line.

21 A. No, we don't. But for --

22 Q. And this is --

23 A. -- illustrative purposes, this is what it
24 would look like. Any tree that needed to be topped
25 underneath the conductors, in the middle third of the

1 right-of-way, would probably end up looking like this
2 after a while.

3 Q. But the wires, in this case, look pretty
4 low; isn't that correct?

5 A. The wires, I don't think they're even in
6 this picture. They look like they're across the
7 street.

8 Q. So --

9 A. The wires would be right above this tree.
10 I don't see them.

11 Q. You're not trying to say a Complainant's
12 tree, not knowing the location of that tree in
13 proximity to the transmission lines, would look like
14 this necessarily.

15 A. No. Again, I pointed out, under the
16 conductors, the mid third of the line where the sag
17 is low, you would have something that looked like
18 this after trimming or topping the tree.

19 Q. Well, how tall would the tree have to be
20 to look like that?

21 MR. McMAHON: Objection, Your Honor. All
22 the witness is trying to show is that this is what a
23 topped tree looks like. It has nothing to do with
24 the location of the lines or any particular
25 Complainant's property in this case. It's just a

1 picture of a tree, that's it.

2 MS. BOJKO: Your Honor, Counsel can't
3 testify. That's why I'm trying to ask the witness if
4 this has any relevance. I moved to strike the
5 document and it was denied, so you said I had
6 latitude to cross him on the documents that you
7 didn't strike and that's what I'm doing.

8 EXAMINER SANYAL: I think the record is
9 clear that Mr. McLoughlin has made it clear that
10 these pictures are not indicative of Complainants'
11 properties, so the record is clear there.

12 I did allow Ms. Bojko to have wide
13 latitude to question the witness, so I will allow you
14 to do so at the moment, but --

15 MS. BOJKO: Thank you, but Your Honor --

16 EXAMINER SANYAL: -- the leash is getting
17 shorter.

18 MS. BOJKO: -- my question, though, is a
19 little different.

20 Q. (By Ms. Bojko) My question is: Without
21 knowing the height of the tree -- do you know the
22 height of this tree?

23 A. No.

24 Q. Do you know the wires that are in
25 relation to this tree --

1 A. No.

2 Q. -- that would have caused it to be topped
3 in this manner?

4 A. No.

5 Q. Without knowing the height of the tree,
6 the location of the tree, the proximity of the tree
7 to the wires, you have no idea what the tree may or
8 may not look like depending on the situation and
9 whether it would result in this being an illustrative
10 picture of that particular tree, correct?

11 A. No. It's from my years of experience
12 looking at trees that have been topped under these
13 right-of-ways and they come to look like this.

14 Q. And it's fair to say this tree is not
15 under a right-of-way, correct?

16 A. Well, it's under a power line of some
17 sort. It may not be in a traditional right-of-way of
18 a high-voltage line, I'm not sure what the line is
19 above it, but when you top trees and repeatedly top
20 them, they get to look like that.

21 Q. And you would also agree with me that
22 this tree, it seems that this is winter, so this tree
23 would be dormant?

24 A. That's correct.

25 Q. So when there's actually foliage on this

1 tree, it wouldn't look like this, correct?

2 A. That's correct.

3 Q. Can we turn to your testimony on page 19,
4 please?

5 A. Yes.

6 Q. Here you talk about something called
7 "corona tip burn." Do you see that?

8 A. What line is that on? On 12?

9 Q. Yes.

10 A. I see it.

11 Q. And this is a phenomenon you state which
12 is defined as being an unusual event; is that
13 correct?

14 A. It occurs I wouldn't say routinely, but
15 I've seen it in many locations over the years.

16 Q. Isn't it true that you Googled this
17 concept to add into your testimony today?

18 A. No. I've used the term "corona tip burn"
19 well before Google, so.

20 Q. You referenced a 2012 study; is that
21 correct?

22 A. Yes. There was studies done since then,
23 but corona tip burn is one of those industry -- a bit
24 of an industry jargon to describe the event of a
25 burning tip of a tree that's probably getting a

1 little too close to the power line even though it's,
2 in many cases, outside the wire security zone.

3 Q. And on that 2012 study that you reference
4 on page 20, lines 10 through 12, you didn't conduct
5 that study, did you?

6 A. No.

7 Q. And you have no authorship of that study;
8 you didn't contribute to the study in any way.

9 A. No.

10 Q. And you are not qualified to talk about
11 the plasma and the transient, formative phase of the
12 phenomenon that occurs for corona tip burn; is that
13 correct?

14 MR. McMAHON: Objection to form.

15 EXAMINER SANYAL: Ms. Bojko, can you
16 rephrase?

17 MS. BOJKO: Sure.

18 Q. Sir, are you stating that you have or
19 have not seen the phenomenon occur?

20 A. Oh, the corona tip burn? Many times.

21 Q. So do you believe that corona tip burn is
22 the same as a flashover?

23 A. No.

24 Q. Sir, have you looked up information
25 trying to explain the phenomenon?

1 A. Yes. I did it as part of why did I
2 witness flashovers that were beyond those distances
3 that would -- that flashovers are normally predicted
4 to occur. So I looked at different rationales for
5 why that might be and found that wind speed might be
6 one of the reasons, temperature of the conductors,
7 higher load than normal might cause the line to sag,
8 and then I also found this corona tip burn may be
9 indicative of the formation of a plasma. And a
10 plasma, being a forced state of matter, is not an
11 insulator like air is; it's a conductor.

12 Q. And that's what you've read from that
13 2012 report and quoted it here?

14 A. Yeah, that 2012 document, and from other
15 places, trying to put together why a flashover would
16 go longer than the Gallet equation predicted. And
17 then they went out in the field, with EPRI, and
18 modified the numbers in the Gallet equation based on
19 realtime measurements. Those are realtime. Trees
20 and lines exist together over a long period of time
21 with many different conditions. Trees constantly are
22 growing. Lines are constantly moving; they're
23 sagging and swaying.

24 Q. Sir, if you look at your testimony on
25 page 19, you say that "such a rare occurrence cannot

1 be ruled out...." Do you see that?

2 MR. McMAHON: What line are you on?

3 A. What line?

4 Q. 7 on 19.

5 A. Right.

6 Q. So the "rare occurrence" you're referring
7 to in that is a flashover.

8 A. That's correct.

9 Q. So you would agree with me that flashover
10 is a rare occurrence.

11 A. The rare occurrence of a flashover a
12 longer distance. That's why companies often like a
13 little more freeboard in addition to safety of their
14 workers, but keeping the tree an adequate --
15 more-than-adequate distance away from the line to
16 cover all these different contingencies.

17 Q. So when you were doing your research
18 after the flashover event that you state in your
19 testimony is such a rare occurrence, that particular
20 flashover event you don't know whether the incident
21 occurred because of the corona tip burn --

22 A. Nope.

23 Q. -- phenomenon, correct?

24 A. Exactly, exactly.

25 Q. Do you know if any of the circuits at

1 issue in this case have corona tip burn?

2 A. I did not witness any.

3 Q. And you don't know; is that true?

4 A. I don't know. We walked the line, we
5 used binoculars, we didn't get up close to the tip of
6 the trees to see whether there was corona tip burn.

7 Q. And isn't it true that you've never
8 actually witnessed this phenomenon occurring?

9 MR. McMAHON: Objection. Asked and
10 answered that he has seen corona tip burn many times.

11 A. I've seen the aftereffects of the burnt
12 tip. I haven't seen -- been able to actually say --

13 MS. BOJKO: Objection.

14 EXAMINER SANYAL: Mr. McLoughlin, if
15 there's an objection pending --

16 THE WITNESS: Okay.

17 EXAMINER SANYAL: -- let your attorney do
18 the work for you for a little bit and then we'll --
19 then we'll proceed. But since you've already
20 answered the question, the objection is overruled.

21 Q. Well, I mean, just so the record is
22 clear, Your Honor, because we were all laughing and
23 talking during that, is that you have not actually
24 seen the phenomenon occur. You've seen the result of
25 what --

1 A. Correct.

2 Q. -- you believe it to be.

3 A. That's correct.

4 Q. And you said you walked the Complainants'
5 properties. You didn't walk the whole 5.92 miles,
6 did you?

7 A. No, we did not.

8 Q. So you drove along a portion of the
9 lines; is that correct?

10 A. Yes. We went to every crossroad and down
11 some access roads and walked in partially. I
12 remember there was a deep ravine, we didn't go there.
13 There were fences, we did not go beyond the fences.
14 So we did not walk the entire right-of-way, foot by
15 foot.

16 Q. Okay. And you would also agree with me
17 that for this corona tip burn phenomenon, that you
18 are not an electrical engineer and you have not
19 studied the electric fields involved in this kind of
20 phenomenon and the low radii as you discuss on
21 page 19, correct?

22 A. No. Just looking at information,
23 scientific information, and making an opinion based
24 on the facts of the case that I could find.

25 Q. Right. So you reviewed other experts'

1 research and work on this particular issue and then
2 you're now adopting it as your own.

3 A. I'm putting it out there.

4 MS. BOJKO: Your Honor, at this time, I
5 move to strike Mr. McLoughlin's testimony starting on
6 line 12, page 19, over to I think it's page 21,
7 line 4. He's talking about a corona tip burn event.
8 He's using scientific terms. He's using engineering
9 electrical terms. He just admitted he's trying to
10 adopt that testimony as his own which means he's
11 offering it for the truth of the matter asserted.

12 He cannot discuss the electric fields.
13 He can't discuss the low radii of the curvature and
14 how the science is behind all of this, even though he
15 puts it in his testimony. He's stated that he looked
16 up this, he researched the issue, but he has not --
17 he is not qualified as an expert to talk about the
18 ionization process, the plasma, and the quotes. He
19 didn't have any part in the 2012 report which he
20 cites to, so that is hearsay.

21 The author of that 2012 report is not
22 here today for me to question them. I have no
23 ability to cross-examine them on that. I have no
24 ability to cross-examine them on the insulator, the
25 plasma, the electrical engineering terms that this

1 witness is not qualified to provide. He's writing a
2 dissertation as if it's an expert report that he's
3 not qualified to give.

4 MR. McMAHON: Your Honor, Mr. McLoughlin
5 is an expert in this case, as you recognized earlier,
6 and, as such, he is entitled to render his opinions
7 including about information and resources that he
8 might consult that might assist in rendering that
9 opinion.

10 He has discussed the concept of corona
11 tip burns that he has witnessed many times in the
12 field, and he was using this resource to explain why
13 flashover events were occurring at distances greater
14 than what he would have expected to be the case, and
15 this was one of the reasons that might have
16 offered -- in that explanation.

17 He is not adopting the testimony -- the
18 report as his own. He is citing the report as a
19 learned treatise to discuss information that would
20 aid in rendering his opinion in this case. The
21 report is not being offered into evidence. Whether
22 Ms. Bojko can cross-examine the author of the report
23 is an irrelevant issue today. This is just a
24 resource that he consulted to render his opinion in
25 this case, to which she has cross-examined him at

1 length.

2 MS. BOJKO: Your Honor, may I respond?

3 EXAMINER SANYAL: Sure.

4 MS. BOJKO: It's a hearsay document. It
5 is a document that he didn't author. It's completely
6 hearsay. Whether I cross-examine -- I don't even
7 have the document to cross-examine him on. Whether I
8 can cross-examine him on the document or not is
9 irrelevant to the discussion of whether he is an
10 expert. Just because you're an expert in the case
11 doesn't mean you're an expert on every subject and
12 every issue in that case. You have to be qualified.

13 The Rules of Evidence require experts to
14 be qualified in their field and have specialized
15 knowledge. By my cross-examination, I just
16 determined that he doesn't have that specialized
17 knowledge and this report is clear hearsay. There's
18 no exception. It's not a learned treatise. It's not
19 by a public entity. It's not a public report. There
20 is no exception to this document.

21 EXAMINER SANYAL: Any response?

22 MR. McMAHON: I don't know what Ms. Bojko
23 thinks she accomplished this morning in this
24 cross-examination, but it's not remotely what she
25 just represented to the Bench.

1 The witness explained how and why he used
2 this source in rendering his testimony, his opinion
3 in this case. I think the Commission is perfectly
4 able to give this testimony and this evidence the
5 weight it determines.

6 EXAMINER SANYAL: I am going to deny the
7 motion to strike. I think the record, again, is
8 clear that the witness has seen the results of corona
9 tip burn. I, again, agree with Mr. McMahon, the
10 Commission can give it the weight it deserves with
11 regard to the citation of this quote and this manual.
12 Again, the witness has said, several times, that he's
13 not an engineer and not a scientist, so the
14 Commission can give his testimony the weight it
15 deserves.

16 MS. BOJKO: Thank you, Your Honor.

17 Q. (By Ms. Bojko) Is this a manual, sir,
18 that you quote or is this an article and a research
19 paper?

20 A. It was a project that was started by
21 FERC, I believe, to look at the Gallet equation and
22 its shortcomings. So FERC -- in other words, NERC
23 proposed to use the Gallet equation as the basis for
24 its new clearance distances. And FERC had an outside
25 entity, Pacific Northwest National Laboratory,

1 evaluate that. So it was a FERC report, commissioned
2 by FERC and produced for FERC, that was released to
3 the public.

4 Q. Just to be clear, it's not a FERC report,
5 correct? It wasn't issued by the FERC commission.

6 A. It was produced for FERC, under the
7 direction of FERC, by the Pacific Northwest National
8 Laboratory.

9 Q. It was an article of a particular
10 research project, correct?

11 A. It was a project report, not just an
12 article.

13 Q. Okay. Do you know Mr. Kirkham?

14 A. No.

15 Q. Okay. So you read the article and you
16 pulled from the article; is that correct?

17 A. That is correct.

18 Q. And that article was written in 2012?

19 A. I believe so.

20 Q. And you believe that it was prepared for
21 the Federal Energy Regulatory Commission?

22 A. Yes. FERC was concerned about the use of
23 the Gallet equation, so they had an outside entity
24 evaluate it.

25 Q. And this was about the FAC reliability

1 standard, in fact, correct?

2 A. That's correct.

3 Q. And it was also about a prior version of
4 the FAC reliability standard, not the one that's
5 currently in existence, correct?

6 A. That's correct.

7 Q. Do you know what number it was about?

8 A. I believe it might have been 3. And the
9 outcome of that was that FERC promoted the research
10 on flashovers to be done in Massachusetts. I think
11 it was mentioned by one of the people yesterday. So
12 that was the outcome of that report, to get real
13 data, not just rely on an equation.

14 Q. Okay. And, Mr. McLoughlin, you did not
15 work for the entity that commissioned that report,
16 correct?

17 A. No.

18 Q. And you didn't work for the entity that
19 actually wrote the report, correct?

20 A. No.

21 Q. Okay. Let's turn to page 15 of your
22 testimony, please. On page 15 of your testimony you
23 discuss really two main ways that vegetation can pose
24 a threat to a transmission line, correct?

25 A. What line is that at?

1 Q. Lines 1 to 16.

2 A. Yes.

3 Q. The first is that if vegetation grows
4 enough, without being addressed, it can physically
5 contact a transmission wire, correct?

6 A. What was that again? If vegetation grows
7 enough? What was that question?

8 Q. Sure.

9 If vegetation grows enough, without being
10 addressed, it can physically contact a transmission
11 wire.

12 A. It possibly could. It will probably have
13 a flashover before it touches the wire on a
14 transmission line. On a distribution line,
15 vegetation contacts a lot more. But on a
16 transmission line, growing into a line is almost
17 impossible; it will flashover before that physical
18 contact is made.

19 Q. Okay. So, I thought that was the other
20 way, that you could either have the direct contact or
21 you could have a flashover, but you're saying that in
22 a transmission wire it would never get close enough
23 to actually contact because there would be a
24 flashover before that?

25 A. Most likely. If a tree were to fall on a

1 conductor there might be a -- just as it was
2 falling -- an instantaneous flashover, but then the
3 contact would be made and the line voltage would
4 continue to go to ground and eventually fault out the
5 line.

6 Q. And we discussed that the NERC standard
7 is 2.3 feet for the 138-kV lines. In other words,
8 NERC is saying that the minimum clearance that must
9 exist between the vegetation and that transmission
10 conductor or wire is 2.3 feet, correct?

11 A. Under all conditions, that's right. Under
12 all conditions at all times.

13 Q. So, sir, if the trees and other
14 vegetation were kept at a clearance of 15 feet from
15 the transmission wires, you would not expect a
16 flashover event to occur, correct?

17 A. Correct.

18 Q. And the distance of 15 feet is over 5
19 times greater than the minimum distance at which NERC
20 provides for the avoidance of these flashover events,
21 correct?

22 A. Correct.

23 Q. Sir, if a tree was maintained at a height
24 of 30 feet which is 10 feet away from the outermost
25 transmission wire, when the lowest transmission wire

1 is 50 feet, that tree could never contact the
2 transmission wire, correct?

3 A. Well, again, it depends on where that
4 tree is. Is it under the phase at the minimum sag of
5 the line? In other words, out in the center of the
6 right-of-way. And are you talking about when the
7 line is on or off, what time of year, how much heat
8 is going over the lines. So these numbers are
9 relative. Oftentimes people look at, if they are
10 available, the original plan of profile drawings
11 which show the design sag of the line under
12 near-worst-case conditions.

13 Q. Absolutely, sir, and maybe you didn't
14 hear the first part of my hypothetical. I said that
15 the tree was 30 feet away from the outermost
16 conductor.

17 A. "30 feet away from," lower than or to the
18 side of?

19 Q. In proximity. To the side of.

20 A. To the side of.

21 Q. Not the clearance distance.

22 A. Not the clearance distance. To the side
23 of.

24 Q. Correct.

25 A. Now we're on line.

1 Q. Okay. So if the tree is 30 feet to the
2 side horizontally and 50-feet tall, that tree would
3 not likely grow horizontally into the wire 30 feet
4 away, correct?

5 MR. McMAHON: Objection to form.

6 Hold on.

7 EXAMINER SANYAL: Don't answer.

8 Can you rephrase it?

9 MS. BOJKO: I'll try.

10 Q. If a tree is maintained at a height of --
11 I'm sorry.

12 The tree is maintained at a height of
13 50 feet, and the tree is 30 feet away from the
14 outermost conductor horizontally so the clearance
15 distance is a lot greater, that tree could never grow
16 into that outermost conductor, correct?

17 MR. McMAHON: Objection to the form.

18 EXAMINER SANYAL: I'm going to allow it.

19 A. Let's go through this hypothetical again.
20 How low is the line to the ground at that point?

21 Q. The lowest transmission wire -- let's try
22 again. Let's strike that. Sorry.

23 I meant to say that the lowest
24 transmission wire is 50 feet.

25 A. 50 feet.

1 Q. Yes, to answer your question, 50 feet.
2 The lowest transmission wire is 50 feet and the tree
3 is -- let's say the tree is 20 feet from the
4 outermost transmission wire.

5 A. Uh-huh.

6 Q. And that tree is 30-feet tall.

7 A. Uh-huh.

8 Q. That tree, if it's maintained at 30-feet
9 tall, it could never grow into the transmission wire
10 that's 50-feet tall, correct?

11 A. If that 50 feet is the design low point
12 of the line at that time, and the tree you're saying
13 is being topped annually?

14 Q. I didn't say -- I didn't use the word
15 "topped." "Topped" is a bad word in this industry,
16 I've been told.

17 (Laughter.)

18 A. Yeah. "Crown reduction."

19 Q. I did not use "topped."

20 A. "Crown reduction." The tree is being
21 pruned back annually or semiannually or you're saying
22 it's being maintained?

23 Q. Yes. The tree is being maintained to
24 maintain a 30-feet height.

25 A. 30-feet height. Well, if it's being

1 maintained, it's being pruned somehow, and the wire
2 is where you say it is, the tree is where you say it
3 is, the likelihood of them contacting is very low.

4 Q. Okay. And, sir, you are familiar with
5 the concepts of compatible and incompatible, correct?

6 A. Correct.

7 Q. And in my hypothetical I just gave you,
8 that tree would be compatible with the transmission
9 wires because it would not grow into the wires.

10 A. If the species of tree -- we have to go
11 down to species like a White Pine -- has to be
12 maintained at 30-feet by an annual pruning of some
13 sort, it's not a compatible tree in the right-of-way.

14 Vegetation management on the transmission
15 line should be from the ground up. There should be
16 no trimming, pruning, topping, crown reduction.
17 Trees should be -- tall-growing trees are, by
18 definition, incompatible. They should be removed
19 from the right-of-way.

20 Q. Tall-growing trees.

21 A. Trees --

22 Q. But if trees are not tall-growing trees,
23 they can be compatible in the right-of-way.

24 A. Well, a "tree" is defined as usually
25 around 20 feet, so the shortest of trees is defined

1 to that level. Now, other people go down. Cornell
 2 uses 12, Utah State uses 13, other people say 10. So
 3 what are we talking about. A tree usually grows
 4 taller over time. They grow. So there are some very
 5 short-statured trees. Mugo Pine grows to 4 or 5
 6 feet. Are we talking about those? No. We're
 7 talking about a tree species here that has to be
 8 maintained by annual or semiannual maintenance of
 9 some sort which is probably pruning. That is not a
 10 desirable situation for a transmission line
 11 right-of-way.

12 You don't want to have trimming becoming
 13 part of your normal work over spans and spans and
 14 lines and lines. You want to work from the ground
 15 up. You want to remove all incompatible vegetation
 16 from the right-of-way but, on the other hand, promote
 17 and foster lower-growing vegetation that is often
 18 sun-loving, early-ecological succession vegetation
 19 that will reside on the right-of-way and help
 20 preclude the future growth of trees.

21 Q. Sir, you just agreed with me that there
 22 are tree species that are shorter in stature, I think
 23 you used that term.

24 A. Correct.

25 Q. There are tree species, under your

1 discussion that you just did, that could be
2 compatible underneath the transmission wires,
3 correct?

4 A. But we're talking about a very limited
5 group and they'd be defined as shrubs because they
6 don't get tall enough to be trees.

7 Q. Are you --

8 A. I said trees go to 10 to 20 feet. So a
9 7-foot -- vegetation that would only grow to 7 feet
10 would probably not be declared a tree, per se, but
11 shrubbery.

12 Q. You're a forester; is that correct?

13 A. That's correct.

14 Q. Are you disputing that there are tree
15 species that are ornamental-type trees that only grow
16 to shorter --

17 A. That's what I'm --

18 Q. -- 7 to 10 feet?

19 A. -- saying. Mugo Pine grows to 5 feet.
20 It's more in the shrub classification. Actually,
21 there is no breakpoint that's agreed upon as to what
22 is a shrub and what is a tree overall, but anything
23 that grows toward the conductors. And we also have a
24 concern not just about the growth of the tree towards
25 the conductors but access down the right-of-way. So

1 if somebody were to have loads of 20-foot-tall trees
2 that are nowhere near the conductor, we still have a
3 access problem on the right-of-way because these
4 trees will prevent easy access or even access at all
5 if planted in abundance so there's an access concern
6 here.

7 So if you have vegetation under 7 feet, a
8 truck would be able to run over that, if need be, to
9 get down the right-of-way in an emergency. At 7 feet
10 in the wire zone that tree will never be a problem --
11 if it is called a tree -- in the right-of-way.

12 But again if, by species, that tree is
13 now 7 feet and will get to 17 feet or 27 feet in the
14 future, it's incompatible so it should be removed.
15 Even if it's only 3-feet tall, if it's going to grow
16 taller, if it's a Sugar Maple, a Red Pine, a White
17 Pine, a Walnut, any one of these normal trees, they
18 have to be removed.

19 Q. Are you done?

20 A. Uh-huh.

21 Q. Sir, I think I started asking that
22 question of would you agree with me that there are
23 tree species. I'd like an answer to that question,
24 sir. Would you agree that there are tree species
25 that are limited to 7 to 15 feet?

1 MR. McMAHON: Objection. Asked and
2 answered.

3 EXAMINER SANYAL: I'm going to allow it
4 because I don't think Ms. Bojko got a concise --

5 A. Well, if you're talking about 7 to
6 15 feet, there are what is called some tree species,
7 some of your Arborvitae, some varieties of Arborvitae
8 are limited to 10 to 12 feet. Like I said, Mugo
9 Pine, 5 to 6 feet. Alberta Spruce, about a dozen
10 feet. And these are called "trees" by some people;
11 others call them shrubbery.

12 Q. And you would agree with me, sir -- are
13 you familiar with the border zone/wire zone construct
14 that Duke is operating under?

15 A. Yes, I am.

16 Q. And you would agree, sir, that trees that
17 are 7 to 15 feet are compatible in the border zone?

18 A. Yes, I would. That's a good
19 generalization that Duke uses.

20 Q. And you would agree with me, sir, that
21 maybe the name "tree" versus "bush" isn't as
22 important as the height of the tree when we're
23 talking about right-of-way; is that correct?

24 A. That's correct. It's the height at
25 maturity that we're concerned about.

1 Q. And you would also agree with me that the
2 proximity, so the actual physical location of the
3 tree in the 100-foot right-of-way zone would be an
4 important factor to consider when determining whether
5 a tree is compatible or incompatible?

6 MR. McMAHON: Objection. Vague. I'd
7 just like a clarification, is Ms. Bojko asking about
8 under Duke Energy's wire zone/border zone construct
9 or just a general opinion?

10 EXAMINER SANYAL: Feel free to clarify.

11 MS. BOJKO: I think the witness
12 understands my question. I did not put it in the
13 context of Duke. I'm asking the witness, as a
14 forester and expert in the field, of whether a
15 tree -- whether the proximity of the tree in a
16 right-of-way and whether the likelihood of that
17 growing into the wire, which I believe is the
18 witness's definition of whether it would be
19 compatible or incompatible at maturity, whether that
20 should go into playing of the determination of
21 whether a tree is compatible or incompatible.

22 MR. McMAHON: Objection as to form and
23 mischaracterizes the witness's testimony about what
24 is incompatibility and her attempt to limit it to
25 growing into the conductor.

1 EXAMINER SANYAL: I do think I'm going
2 to --

3 MS. BOJKO: I'll rephrase, Your Honor.

4 EXAMINER SANYAL: Thank you.

5 MS. BOJKO: I was trying to shortcut
6 this.

7 EXAMINER SANYAL: Yes.

8 Q. (By Ms. Bojko) Sir, could you tell me
9 what you believe -- I thought we already did this so
10 I don't want to get an "asked and answered"
11 objection, but could you please tell me your
12 definition of "compatible tree"?

13 A. There's compatible or incompatible, and
14 it's also referred to as capable or incapable, target
15 species versus nontarget species, desirable versus
16 undesirable. There's about four different
17 nomenclatures and they have a host of
18 characteristics, the most important of which is
19 height.

20 Now, at maturity, if a tree could grow
21 anywhere near the wire security zone, it's
22 incompatible and should be taken out. There's also
23 concerns for access. So if somebody were to plant
24 row upon row of Arborvitaes right near a tower,
25 they're only going to grow to 12 feet, they're never

1 going to have a problem, but they would be a problem
2 for access. So they would not be desirable in the
3 wire zone from the standpoint of doing work.

4 You have to get a bucket truck in there
5 to get to one of the conductors or get to the tower.
6 You don't want to have woody, thick, sturdy, woody
7 vegetation which may only be, as you said, 15 to 20
8 feet in your way, even though the conductor was
9 sufficiently overhead that, even at maturity, that
10 Arborvitae would not reach the conductor. So there's
11 other factors besides just height, but height is the
12 primary universal reason.

13 Q. Fair enough. And I guess the point of my
14 last question was, which you just pointed out,
15 proximity to the transmission wires is also a factor
16 to consider.

17 A. Oh, yes. Correct.

18 Q. If those same Arborvitaes were at the
19 edge of the wire zone and you didn't need access or
20 you could drive around them, then there would be no
21 issue; is that correct?

22 A. The edge of the wire zone -- that's why
23 the wire zone is there, it's the wire zone. If they
24 were in the border zone certainly, but again --

25 Q. So is it your understanding --

1 A. -- you're splitting hairs here now. It
2 would be hard to determine without actually looking
3 at the site in question. Are there other trees out
4 there blocking access, besides the Arborvitaes?
5 There's all sorts of -- is there a gully and the
6 Arborvitaes are planted at the end of the gully and
7 you can't get through the gully and you have to go
8 through where the Arborvitaes are? All these little
9 factors go into consideration on access and
10 accessibility and being able to work on a site.

11 Q. Okay. Do you know the distance from the
12 center of the transmission conductor to the wire
13 zone?

14 A. The center of the transmission conductor?
15 They're usually a double circuit here.

16 Q. I'm sorry, I used the word "conductor."
17 Do you know -- you tell me. Do you know
18 what the definition of "wire zone" is?

19 A. Usually it's a certain distance outside
20 the outermost conductor and it's determined by the
21 Company usually.

22 Q. Okay.

23 A. But it's usually, if you go back to some
24 of the standards, it's a certain distance between the
25 normal conductors. So if the conductors were 20-feet

1 apart, the wire zone may be 10 to 15 feet outside the
2 normal wire. Some people say 50 percent, some people
3 say 60 percent of the distance between the conduct --
4 the required electrical distance between the
5 conductors.

6 Q. So what I've understood your testimony to
7 be in determination of compatible versus incompatible
8 tree, is that you look at the height of the tree, and
9 you look at accessibility of the tree or the
10 accessibility to get around the tree, like where the
11 proximity of the tree is, and the accessibility of
12 the Company to get to its wires; is that fair?

13 A. Those are the two biggest issues at hand.

14 Q. Okay. And isn't it true, sir, that you
15 would not recommend removing all desirable plants
16 from a transmission right-of-way?

17 MR. McMAHON: Objection to form. Are we
18 talking about any specific location, border zone,
19 wire zone, outside the right-of-way, peripheral?
20 Where?

21 EXAMINER SANYAL: Would you rephrase?

22 MS. BOJKO: Your Honor, I answered that
23 question in my question.

24 Q. I said: Do you recommend removing all
25 desirable plants from a transmission right-of-way?

1 A. It depends on the conditions. If there
2 are a high density of trees and you're mowing and you
3 have to mow the entire right-of-way to mow every
4 tree, there will be some desirable vegetation that is
5 mowed along with the undesirable; that is just an
6 unfortunate circumstance.

7 Now, if the trees are lower density and
8 you're hand cutting, you would, of course, just hand
9 cut the trees and leave all the low-growing desirable
10 vegetation on the right-of-way.

11 Like I said, the low-growing vegetation
12 is an asset. It is something, a goal to achieve. It
13 is something to promote and foster on the
14 right-of-way because the denser the desirable
15 vegetation gets, the more of it, the more diverse and
16 robust it is, the more difficult it is for a tree
17 seedling to be able to sprout and to grow through
18 that dense, lower-growing desirable vegetation.
19 That's why they often refer to it as a "relatively
20 stable right-of-way plant community."

21 MS. BOJKO: Your Honor, may I have the
22 first part of his answer read back?

23 EXAMINER SANYAL: Sure.

24 (Record read.)

25 MS. BOJKO: Your Honor, at this time, may

1 I approach the witness?

2 EXAMINER SANYAL: You may.

3 Q. (By Ms. Bojko) Sir, do you remember being
4 deposed on November 2nd?

5 A. Yes.

6 MS. BOJKO: Actually, do you have your
7 own copy of his deposition? I'm assuming you do.

8 EXAMINER SANYAL: I actually -- is it
9 this one?

10 MS. BOJKO: No, it shouldn't be. Oh,
11 they filed it.

12 EXAMINER SANYAL: Yeah.

13 MS. BOJKO: Sorry.

14 Q. (By Ms. Bojko) Do you remember being
15 deposed on November 2nd, 2018?

16 A. Yes, I do.

17 Q. Sir, when you were deposed were you under
18 oath?

19 A. Yes.

20 Q. Would you please turn to page 24 of that
21 deposition, starting on line 9.

22 "Question: And do you recommend removing
23 all desirable plants from a transmission
24 right-of-way?

25 "Answer: Not at all. In fact, I

1 advocate the retention and the efforts be made to
2 promote all of the low-growing vegetation on the
3 right-of-way when removing the trees."

4 Is that what the Question and Answer
5 says?

6 A. I'm trying to look at the context.

7 Q. The question is whether I read that
8 correctly.

9 A. Yes, you did, but I'm looking at the
10 context.

11 Q. Thank you.

12 May I have the transcript? You're not
13 allowed to read the transcript.

14 A. I'm not allowed to read this?

15 Q. Not for your testimony.

16 A. I don't know what the -- sorry about
17 that.

18 MR. McMAHON: I'm going to object for the
19 record to the extent that was an attempt to impeach
20 the witness. The answers provided by the witness
21 today and in his deposition were completely
22 consistent. Today he just provided more detail.

23 MS. BOJKO: Your Honor, I obviously
24 disagree. The record speaks for itself.

25 EXAMINER SANYAL: I agree. Let's move

1 on.

2 Q. (By Ms. Bojko) Sir, if there was a
3 downward slope away from a transmission tower on a
4 property, that slope would affect the distance of the
5 trees from the transmission wire, correct?

6 A. It should.

7 Q. So you would say that trees that might
8 have been incompatible on a normal-level elevation
9 without a slope, could be compatible at the bottom of
10 such slope, correct?

11 A. Yes, depending on the location of the
12 conductors, that's correct.

13 Q. In other words, the height of the
14 transmission wire impacts whether certain vegetation
15 could be considered compatible or incompatible.

16 A. Correct.

17 Q. Mr. McLoughlin, you would agree with me
18 when I say that Duke's standards do not account for
19 the height of the transmission wires, correct?

20 A. I think I've read somewhere that they
21 look at ravines as areas that might be out of normal
22 maintenance. I forget where, but when we went out to
23 look at that ravine it was mentioned that the bottom
24 of that ravine might be deep enough and away from the
25 conductors enough that some of the vegetation at the

1 bottom could be retained. So I don't recall them not
2 having that specification, per se.

3 Q. So you believe that Duke actually takes
4 into consideration -- you're familiar with Duke's
5 guidelines that describe the wire zone and border
6 zone; is that correct?

7 A. Yes.

8 Q. You believe that those guidelines take
9 into consideration the height of the transmission
10 wires and the elevation of the property and, if there
11 was a tree at the bottom of the ravine, that tree
12 could stay in the wire zone?

13 A. I forget whether it was there or in other
14 documents that I read, but again my recollection is
15 when we were out on the site and looking down at the
16 ravine, it was mentioned that not all the vegetation
17 would need to be taken because of the height of the
18 conductors over that ravine.

19 Q. So a tree in that situation would be able
20 to remain, it's your understanding; is that correct?

21 A. If -- again, if the distance was
22 sufficient enough so at maturity that tree would not
23 reach the conductors, yes. So if you had 200 feet of
24 clearance and all the trees down there are only going
25 to get to 100, 125 feet, you would have sufficient

1 clearance in that ravine and there would be no reason
2 to take that vegetation out.

3 Q. And it's your understanding, sir, that
4 the heights of the compatible vegetation for Duke's
5 guidelines do not change depending on the height of
6 the wires.

7 A. Could you repeat that again?

8 Q. Sure.

9 Is it your understanding that Duke's
10 guidelines, Duke's IVM program, the heights of the
11 compatible vegetation that are allowed do not change
12 or are not modified depending on the height of the
13 transmission wires.

14 A. I'm not sure.

15 Q. On page 14 of your testimony -- are you
16 there, sir?

17 A. No.

18 Q. Lines 9 and 10?

19 A. Was that page 14?

20 Q. Yes.

21 A. Yup.

22 Q. On page 14, lines 9 and 10, are you
23 stating that Duke's prior vegetation management plan,
24 previously implemented, was ineffective?

25 A. The previous owners of the line may have

1 also had ineffective vegetation management, and if
 2 Duke was just cutting or mowing, using mechanical
 3 treatments without any herbicide use, this would have
 4 been ineffective. So you would have a resprouting of
 5 all the hardwood trees that were cut or mowed without
 6 any herbicide use. I was not brought up to date on
 7 exactly what management techniques were used, but in
 8 these circumstances where you have to do reclamation,
 9 normally the previous management was not adequate.

10 Q. Again, Mr. McLoughlin, on November 2nd,
 11 when you had a deposition, were you under oath?

12 A. Uh-huh.

13 Q. If you would turn to page 90 of the
 14 deposition. If I can read it, it says:

15 "On page 14, lines 9 and 10, are you
 16 stating that Duke's prior vegetation management plan
 17 previously implemented was ineffective?"

18 And your answer was "Yes."

19 Is that correct?

20 A. Yes. It looked like they hadn't used
 21 herbicides. I just answered that the same way, yeah.

22 MS. BOJKO: Your Honor, may we take just
 23 a few minutes' break so I can kind of get my notes in
 24 order and hopefully wrap up here before lunch?

25 EXAMINER SANYAL: Sure. Five minutes?

1 MS. BOJKO: Yes.

2 EXAMINER SANYAL: Okay. Let's go off the
3 record.

4 (Recess taken.)

5 EXAMINER SANYAL: Let's go back on the
6 record.

7 Ms. Bojko, you may proceed.

8 MS. BOJKO: Thank you.

9 Q. (By Ms. Bojko) Mr. McLoughlin, it's true
10 that NERC standard FAC-003-4, that standard does not
11 require that all vegetation be removed from the
12 right-of-way, correct?

13 A. That's correct.

14 Q. And, sir, you would agree with me -- are
15 you familiar with the word "reclaiming"?

16 A. Yes, yes.

17 Q. Reclaiming a right-of-way is removing all
18 of the trees from that right-of-way that could grow
19 up into a conductor?

20 A. That's all of them at the same time, yes.

21 Usually reclaiming is in an area where --
22 again, I think I mentioned it earlier -- that the
23 past management practices were inadequate. Trees
24 filled the right-of-way. And before you can start to
25 really implement IVM, integrated vegetation

1 management, one has to reclaim the right-of-way,
2 eliminate all the trees at once, so it's a real
3 reclamation effort.

4 Q. And it's a form of clear cutting?

5 A. It can be. If all -- if the whole
6 right-of-way is filled with the trees, the result
7 often looks like a clear cut.

8 Q. And that's your definition of "clear
9 cutting," removing all vegetation in the
10 right-of-way?

11 A. There's different definitions of clear
12 cutting and one is, you know, removing all trees from
13 the right-of-way; not all vegetation per se.

14 Q. And, sir, would you consider herbicide
15 application, in a general widespread manner, a form
16 of clear cutting?

17 A. If it's done broadcast over the entire
18 right-of-way indiscriminately, yes.

19 Q. Sir, would you agree with me that the
20 cutting technique that can be used to minimize the
21 regrowth of a tree -- excuse me. Let me rephrase.

22 You would agree with me that the
23 cutting -- a cutting technique can be used in order
24 to minimize the regrowth of a tree when you are
25 pruning a tree.

1 A. Yes. Often referred to sometimes, I
2 think somebody mentioned it yesterday, the Shigo
3 method. Dr. Shigo's method of pruning.

4 Q. And I'm sorry, I may have misunderstood a
5 response that you said to me earlier today. Have you
6 professionally trimmed and pruned trees?

7 A. Under my direction, yes, there's been
8 trees that have needed to be pruned, topped, or crown
9 reduction. Many side trees that are off the
10 right-of-way have to be pruned because their branches
11 are growing into the right-of-way, so you do some
12 limited trimming and pruning on transmission.

13 Although in New York State, where I work
14 primarily, the Public Service Commission, in 2005,
15 had an Order called the "Enhanced Right-of-Way
16 Vegetation Management" which required that all trees
17 that heretofore needed to be pruned that were found
18 on the right-of-ways should be removed. So there's
19 very little pruning done in New York State now
20 because of the Order from the Public Service
21 Commission. So during my -- during some of my
22 consulting there, there was no -- I did not get
23 involved with any tree pruning at all.

24 MS. BOJKO: Your Honor, I move to strike
25 the whole discussion about the New York Power

1 Authority. First of all, I asked if he physically
2 conducted tree trimming and pruning, it's a pretty
3 narrow question, and then to go into the New York
4 Power Authority and some alleged --

5 THE WITNESS: The Public Service
6 Commission.

7 MS. BOJKO: I'm sorry. The Public
8 Service Commission and some alleged Order that they
9 had for some alleged property. That is irrelevant to
10 this case and not proven. And then a citation to
11 some document that nobody has and that is hearsay and
12 inappropriate for testimony, so I move to strike.

13 MR. McMAHON: I don't recall Ms. Bojko
14 asking if he physically pruned anything. She asked
15 if he pruned trees, and he was answering the question
16 asked.

17 EXAMINER SANYAL: Carolyn, could you read
18 back Ms. Bojko's question?

19 (Record read.)

20 EXAMINER SANYAL: Okay. Based on that
21 question, I am going to grant Ms. Bojko's motion to
22 strike.

23 Mr. McLoughlin, could you answer that
24 particular question? Thank you.

25 THE WITNESS: Under my professional

1 supervision, there has been pruning done.

2 Q. (By Ms. Bojko) Okay. Have you physically
3 pruned and trimmed trees?

4 A. On my own property and elsewhere for
5 other people, yes, but not along power lines myself.
6 It's all Union work.

7 Q. That's why I asked "professionally."
8 Have you -- let me put it all together. Have you
9 physically professionally trimmed trees?

10 A. No.

11 Q. Thank you.

12 You mentioned the IVM just a few minutes
13 ago. Isn't it true that you first learned of the IVM
14 in connection with this case when Duke presented
15 documents to you about the IVM?

16 A. I have been privy to Duke's -- not just
17 this case but previously -- to Duke's IVM program, so
18 I was aware of it much earlier than this case.

19 Q. So you said that you were aware, I
20 believe, of the concept of IVM. But the IVM you're
21 speaking of, where is it referenced? Do you know
22 where the IVM concept is referenced?

23 A. In Duke documents.

24 Q. Okay. That you first became aware of in
25 connection with this case, correct?

1 MR. McMAHON: Objection to the form. Is
2 Ms. Bojko asking his awareness of the Company's
3 policy or just IVM in general?

4 EXAMINER SANYAL: Could you specifically
5 rephrase your question so it's more clear, Ms. Bojko?

6 MS. BOJKO: Sure.

7 EXAMINER SANYAL: Thank you.

8 MS. BOJKO: I'll back up. I'll ask some
9 more questions. I am trying to shortcut to the end.

10 Q. (By Ms. Bojko) Were you involved -- are
11 you familiar with Duke's vegetation management plan?

12 A. Yes.

13 Q. Okay. And when you talk about the IVM,
14 here today you've referenced the IVM, is there a
15 document containing Duke's IVM?

16 A. I don't know if there's a document, but I
17 read references to IVM in the multitude of different
18 documents over different years that were produced by
19 Duke in which IVM was mentioned. And in talking to
20 some of their people, I also heard them use the term
21 "IVM."

22 Q. Do you know whether there's an IVM
23 document that outlines how Duke is going to proceed?

24 A. I remember reading quite a bit about IVM.
25 I don't know if it was a separate document or a

1 subsection of a document or a part of a plan, so I
2 don't recall where exactly that document is.

3 Q. So you don't believe that this IVM is a
4 concept; you believe it's an actual plan?

5 A. Well, it's both a concept and it can be
6 put into action through plans, various IVM concepts.
7 It's a broad area, different techniques, different
8 objectives, and it's being used because they -- Duke
9 wants to foster lower-growing vegetation as well as
10 take out all the trees that are on the right-of-way.

11 Q. So isn't it true, sir, that you read
12 about the IVM in some of the documents that you
13 pursued for this particular job?

14 A. I believe so.

15 Q. And you wouldn't be able to tell me
16 exactly where you read an IVM plan or where you
17 didn't, correct?

18 A. At this point in time, no.

19 Q. And are you familiar with the vegetation
20 management plan that Duke has on file with Public
21 Utilities Commission?

22 A. Yes, I read that, yes.

23 Q. And would you agree with me that the
24 integrated vegetation management concept is not
25 contained in the -- or the word -- let me rephrase.

1 Would you agree with me that "integrated
2 vegetation management" that phrase is not contained
3 in the Public Utilities Commission of Ohio's filed
4 vegetation management for Duke?

5 A. Subject to check, I don't know.

6 Q. Is it fair to say that you believe that
7 Duke's IVM is a collection of different documents?

8 A. I believe I found it in different areas
9 and they had, if I remember correctly, there was one
10 area where they talked specifically about IVM.

11 Q. If we can refer to page 15 of your
12 testimony, sir. Page 15, from comments that you make
13 on lines 15 and 17, is it fair to say that you would
14 agree that removal of trees on a slope could cause
15 soil erosion?

16 A. Where was that again? On page 15?

17 Q. Oh, I'm sorry. It's page 11, lines 15
18 through 17. My apologies.

19 A. I was stymied there. Page 11, line 15.

20 Yes, there's always the likelihood of the
21 potential for erosion on slopes, so you have to be
22 careful in what type of management techniques you
23 employ so as not to disturb the soil and to retain as
24 much vegetation as possible. And if you're cutting
25 down trees, oftentimes you leave them close to the

1 ground, scattered about, so that they act as an
2 impediment to running water, so they act also as a
3 physical impediment to erosion control -- for erosion
4 control.

5 Q. Mr. McLoughlin, as I understand your
6 testimony here today, you were hired by Duke Energy
7 or Duke Energy Ohio?

8 A. Duke Energy Ohio, I believe.

9 Q. And you were hired specifically to
10 provide expert testimony and opinions in this
11 Complaint case pending before the Commission,
12 correct?

13 A. That's correct.

14 Q. Could we look at the end of your
15 testimony, please.

16 A. Page 21?

17 Q. Yes. In the Conclusion section.

18 A. Yes.

19 Q. You state that Attachments 1 and 2 were
20 prepared at your direction and under your control.
21 You're not suggesting that you actually prepared or
22 drafted Attachments 1 and 2, are you?

23 A. No. I just brought them to the attention
24 of the attorneys that they were to be attached to my
25 testimony.

1 Q. Okay. And just so we're clear because of
2 your conclusion statements, you were not involved in
3 drafting either of these reports -- well, one's a
4 standard and one's a report.

5 A. That's correct.

6 Q. And I asked you if were employed by FERC
7 Staff or NERC Staff at the time the report was
8 drafted and you stated no, correct?

9 A. That's correct.

10 Q. And your answer would be the same with
11 regard to Attachment 2, the NERC standard FAC-003-04,
12 you were not involved in the drafting of that
13 standard.

14 A. That's correct.

15 Q. And, sir, you were not employed by NERC
16 for the drafting of that standard.

17 A. Not at all. I've never been employed by
18 NERC or FERC.

19 Q. Excuse me, I meant during the time
20 period. Thank you. Thank you for clarifying that.

21 So in this conclusion when you say
22 Attachments 1 and 2 were prepared at your direction
23 or under your control, again you just meant that you
24 provided them for use with your testimony.

25 A. That's correct.

1 MS. BOJKO: Thank you, Your Honor. I
2 have no further questions.

3 EXAMINER SANYAL: Thank you.

4 Mr. Etter.

5 MR. ETTER: Yes, thank you. Just a
6 couple clarifying questions.

7 - - -

8 CROSS-EXAMINATION

9 By Mr. Etter:

10 Q. Good afternoon, Mr. McLoughlin.

11 A. Good afternoon, sir.

12 Q. This morning you had a discussion with
13 Ms. Bojko regarding flashover and there was a
14 discussion in your testimony as well. And I just
15 wanted to clarify, you're not representing that you
16 saw evidence of flashover due to trees in the
17 transmission right-of-way on any of the Complainants'
18 properties that are at issue in this case.

19 A. That's correct. I didn't see any
20 evidence whatsoever.

21 Q. Okay. And similarly, you're not
22 representing that you saw evidence of arcing due to
23 trees in the right-of-way.

24 A. Of arcing neither.

25 MR. ETTER: Okay. Good. That's all I

1 have. Thank you.

2 THE WITNESS: Thank you.

3 EXAMINER SANYAL: You can proceed with
4 redirect.

5 MR. McMAHON: Thank you, Your Honor. I
6 think we can proceed right now.

7 - - -

8 REDIRECT EXAMINATION

9 By Mr. McMahon:

10 Q. Mr. McLoughlin, do you recall
11 testimony -- questions and testimony regarding height
12 of the conductor down to a ravine? Do you remember
13 that discussion --

14 A. Yes.

15 Q. -- in response to Ms. Bojko's questions?

16 A. Yes, I do.

17 Q. Okay. Are you familiar with the concept
18 of leave area?

19 A. It's often a term used by utilities where
20 no work or little work has to be done on the trees.
21 You can leave it alone.

22 Q. And does that concept relate to your
23 explanations or your answers in response to
24 Ms. Bojko -- strike that.

25 How does that concept relate to the Q and

1 A with Ms. Bojko regarding vegetation management and
2 the height of conductors in a ravine area?

3 A. Well, that would be, perhaps, an example
4 of a leave area. If the ravine was deep enough and
5 the conductors were high enough, you don't have to do
6 anything in the ravine. If the conductors are
7 100 feet off the ground, or 150, there's little you
8 have to do. So you may take out some of the
9 taller-growing trees that might actually be able to
10 reach the conductor. So it all depends on the
11 conductor clearances and the tree species at the
12 bottom of the ravine.

13 Q. Do you recall some questions by Ms. Bojko
14 regarding, you know, with assumptions leading in like
15 "If trees are kept at 15 feet" or "If a certain tree
16 is maintained at 30 feet," can you explain or provide
17 any further explanation as to how, or if at all, it
18 is possible to keep or maintain trees at specific
19 heights?

20 A. Well, again, you want to have some
21 aggressive pruning program. You could keep the
22 height of that tree within a certain range,
23 certainly. So if a 30-foot tree was pruned back to
24 27, the next year's growth may be 3 feet more, 4 feet
25 more, it would still be about 30. Then you would

1 trim it, prune it again, and it would keep it at
2 about 30 feet. You wouldn't be able to keep it
3 exactly at 30 feet, but you'd be able to keep it in
4 the range of 30 feet through an aggressive program of
5 pruning.

6 Q. And is that a practical or sensible
7 approach for a utility company along a transmission
8 line?

9 MS. BOJKO: Objection.

10 A. Not at all.

11 MS. BOJKO: Leading.

12 A. No -- oh.

13 EXAMINER SANYAL: I'm going to allow it.
14 Go ahead.

15 Q. Go ahead.

16 A. Pruning along transmission lines is not
17 an acceptable practice. It is quite acceptable on
18 distribution lines. Lower-voltage lines, where tree
19 pruning is done routinely, is quite acceptable and is
20 the best management practice for those lines.

21 If you take that concept of pruning and
22 apply it to transmission lines, it can be done, it's
23 costly, it's dangerous, it jeopardizes security. And
24 the big factor is once you start pruning on some
25 properties on a transmission line, why not prune on

1 all properties? It's sort of a ripple effect or a
2 domino effect. You can't tell other landowners
3 you're going to remove their trees, when you're
4 pruning next door or down the road or at some other
5 location. You try to keep a consistent management
6 practice of removing trees on transmission and
7 pruning on distribution.

8 So no, especially on annual/biannual
9 pruning. I know Duke has done pruning on a six-year
10 cycle on some of these trees and that's where the
11 difficulty comes in. You have to remove a lot of the
12 tree to get six years of growth and clearance. So
13 it's a pretty difficult situation when you're pruning
14 on high voltage and trying to do it in an economical
15 manner by using a six-year cycle.

16 Q. And what type of information might a
17 utility company, like Duke Energy Ohio, consider when
18 determining how much of a tree should be or needs to
19 be removed while it is conducting vegetation
20 clearance along a transmission line?

21 A. Well, Duke had commissioned a number of
22 studies on that, plant-growth studies actually done
23 by my company, ECI, and it provides all that data in
24 these studies that look at tree growth and how much
25 you have to take to get adequate clearance over time,

1 and there's numerous tables, a lot of data. They've
2 done a couple of these studies in different locations
3 to my understanding.

4 MS. BOJKO: Excuse me, I'm sorry, before
5 you go to your next question, can I please have that
6 answer read back?

7 EXAMINER SANYAL: Let's do the --

8 MS. BOJKO: Not the answer, the question,
9 I'm sorry.

10 EXAMINER SANYAL: Let's do the question,
11 Carolyn.

12 (Record read.)

13 MS. BOJKO: And can you start his answer?

14 (Record read.)

15 MS. BOJKO: Thank you.

16 EXAMINER SANYAL: Okay.

17 Q. (By Mr. McMahon) And have you seen one of
18 those growth studies that you're referring to?

19 MS. BOJKO: Objection. Now I'm going to
20 object. Your Honor, this goes beyond the scope of
21 cross-examination and there's been no foundation. He
22 said other people in his office did this, but, as he
23 stated to me in the beginning of cross-examination,
24 he doesn't have contact or responsibility for all
25 employees, and so we're getting into an area of

1 hearsay with this witness. There's been no
2 foundation and it's beyond the scope of cross.

3 MR. McMAHON: Actually, on
4 cross-examination, Ms. Bojko specifically talked
5 about this. I previously asked Mr. McLoughlin about
6 how one maintains trees at 15 feet and how one
7 maintains trees at 30 feet. It was specifically in
8 that lengthy hypothetical that took several attempts
9 to get into the record. And my redirect is getting
10 into facts and information that the Company might
11 consider to accomplish exactly what Ms. Bojko was
12 asking about.

13 MS. BOJKO: Your Honor, I did not ask him
14 at all about maintaining the tree to 15 feet. I did
15 not. I was asking him a hypothetical about whether
16 the tree would reach the conductors if it was
17 maintained at 15 feet. He is not an arborist, so I
18 did not ask him about trimming the tree and
19 maintaining it to a 15-foot level.

20 EXAMINER SANYAL: I'll allow you a brief
21 response.

22 MR. McMAHON: My response is Ms. Bojko
23 expressly asked if a tree is kept at 15 feet and then
24 if a tree is maintained at 30 feet, and I'm trying to
25 ask the witness to explain, as he did previously, how

1 one might do that and the maintaining, and the
2 witness discussed how aggressive pruning would be
3 necessary, and I'm trying to find out what
4 information might have to be considered to do that.

5 EXAMINER SANYAL: So I think I agree with
6 you, Mr. McMahon, that on cross we did talk about how
7 to maintain that tree. However, I think in the
8 witness's response now we are referring to growth
9 studies that none of us have access to. So is there
10 a way that the witness can --

11 MR. McMAHON: That's where I'm going.

12 EXAMINER SANYAL: Well, if you're going
13 to introduce it into evidence and have copies for
14 everyone, then I will allow that line of questioning.

15 And you can recross, you'll have an
16 opportunity.

17 MS. BOJKO: Your Honor, the growth study
18 was not discussed. I let that first long answer go
19 where he referenced the growth studies, but now we're
20 getting into the actual document of the growth study.

21 EXAMINER SANYAL: I'm explicitly
22 overruling the objection now since he -- let's look
23 at this document and see where the questioning goes.

24 THE WITNESS: I've got the 2016 version.

25 MS. BOJKO: I don't have a copy.

1 MR. McMAHON: Oh, I'm sorry.

2 Your Honor, we'd like to mark this as
3 Duke Energy Ohio Exhibit 4, please.

4 MS. BOJKO: Your Honor, I would note that
5 this document was produced under "Confidential," so I
6 don't know if we have to go into a confidential
7 record to discuss it or if they're waiving
8 confidentiality now or what.

9 MS. WATTS: We are waiving
10 confidentiality.

11 EXAMINER SANYAL: Excellent.

12 EXAMINER ADDISON: Thank you for noting
13 that, Ms. Bojko.

14 MR. McMAHON: I'm sorry, Your Honor, do
15 you have a copy?

16 EXAMINER SANYAL: Yes, I have a copy.

17 MR. McMAHON: Okay.

18 EXAMINER SANYAL: If there's a second
19 copy floating around, we'd love two. Okay, that's
20 fine. We're okay, we will share, it's okay.

21 (EXHIBIT MARKED FOR IDENTIFICATION.)

22 Q. (By Mr. McMahon) Mr. McLoughlin, we've
23 handed you what's been marked as Duke Energy Ohio
24 Exhibit 4. You have that in front of you, correct?

25 A. Correct.

1 Q. Could you explain to the Bench what this
2 document is?

3 A. Well, what you have here is a lot of data
4 brought into tables where it shows you the percentage
5 of trees that will be in violation under different
6 treatment cycles and clearance based on varying
7 pruning clearance rates, and there are numerous
8 tables for different situations. And it does give
9 the right-of-way manager some good hard information
10 about how much you have to trim back in order to
11 keep, on average, trees in the clearances over the --
12 over different cycles. So you can have -- it goes
13 out to a 15-year cycle and the clearances go from 1
14 to 15 feet. So really it gives you some good hard
15 data on the percentages that will be in violation
16 over that time frame.

17 EXAMINER SANYAL: Is this --

18 MS. BOJKO: Objection.

19 EXAMINER SANYAL: Go ahead. I'll hear
20 your objection first.

21 MS. BOJKO: Your Honor, there was
22 absolutely no -- I was waiting for the foundation to
23 be laid for this document, Your Honor. He has not
24 laid any foundation of this witness's familiarity
25 with the document, that he heard about it before

1 today, that he worked on it. There's been no
2 foundation to start reading from or characterizing or
3 summarizing the document. It's inappropriate until
4 that proper foundation is laid.

5 EXAMINER SANYAL: I think the witness did
6 previously mention that ECI was retained to prepare
7 this study.

8 MS. BOJKO: Does that mean him? He also
9 told me --

10 EXAMINER SANYAL: But I will allow
11 Mr. McMahon to lay further foundation.

12 MR. McMAHON: Thank you, Your Honor.

13 Q. (By Mr. McMahon) Mr. McLoughlin, could
14 you explain, please, to the Bench, how you're
15 familiar with the growth study that's been marked as
16 Duke Energy Ohio Exhibit 4, please?

17 A. I was provided it by Duke. Even though
18 it was an ECI study, I did not see it because it's
19 confidential to the client. So I was provided this
20 by Duke and then reviewed them. There's another
21 study dated 2014, I believe. It does give a lot of
22 good information on the tables and how you can
23 predict the clearances over time from vegetation that
24 has been pruned. So it is hard information --

25 Q. Can --

1 MS. BOJKO: Objection, Your Honor. I'm
2 going to object. That's not proper foundation.
3 Because Duke handed him a document, does not make
4 this document proper evidentiary material to enter
5 into the record in this case and to refer to it in
6 testimony. There has to be foundation laid that he
7 was a part or drafted this document. Otherwise, it's
8 pure hearsay. This is hearsay. He was not involved
9 in the drafting. It's not an exception to hearsay.
10 It's not a learned treatise. It's not a public
11 record. There's no exception. It's hearsay from
12 consultants that were located in -- that prepared it
13 for a completely different utility company, Duke
14 Energy Charlotte. It wasn't prepared for this
15 company and it wasn't prepared by him or on his
16 behalf.

17 EXAMINER SANYAL: I think, Mr. McMahon,
18 you were going to lay further foundation, I'm
19 assuming?

20 MR. McMAHON: Yes.

21 EXAMINER SANYAL: So let's see what his
22 next question is and then we'll come back to your
23 objection.

24 MS. BOJKO: Thank you, Your Honor.

25 MR. McMAHON: Additionally, we have not

1 yet tried to move it into evidence but for now we're
2 just trying to get there.

3 Q. (By Mr. McMahon) Mr. McLoughlin, have
4 you -- let me ask you this: Have you reviewed this
5 document?

6 A. Yes. I perused it. I haven't thoroughly
7 evaluated everything in the document.

8 Q. Are you familiar with growth studies?

9 A. Yes.

10 Q. Other than this document?

11 A. Yes.

12 Q. And are you aware that this document
13 discusses a growth study, conducted by Environmental
14 Consultants, Inc., for the Duke Energy Ohio and
15 Kentucky region?

16 A. That's correct.

17 Q. And have you discussed this growth study
18 with employees and representatives of the Company?

19 A. A bit.

20 Q. Okay. And based on your knowledge and
21 experience in the vegetation management industry, how
22 is the information in Duke Energy Ohio 4, this growth
23 study, relevant to the facts and issues in this case?

24 MS. BOJKO: Objection. That's where I
25 renew my objection. It doesn't matter that it hasn't

1 been offered for admission into evidence, Your Honor.
2 He is now going to explain, as if it's the truth of
3 the matter asserted therein, how this document
4 applies to this specific Complaint case when he had
5 no involvement.

6 He's only talked to people "a bit." He
7 did not talk to ECI, the actual authors. He's talked
8 to Duke Energy employees about this document. It is
9 pure hearsay. It can't be read into the record. It
10 cannot be used as evidence even in the testimony
11 that's provided.

12 Yes, I will object to the admission of
13 the whole document itself, but he cannot relay
14 hearsay information and repeat it as if it's true in
15 the -- in the testimony today at trial.

16 EXAMINER SANYAL: I'm going to allow the
17 witness to answer the question before making our
18 ruling.

19 A. Ask the question again.

20 Q. I think the bottom line of my question
21 was: How is this growth study, Duke Energy Ohio
22 Exhibit 4, relevant to the facts and issues in this
23 case?

24 A. What it does, it allows you to predict
25 how severe your clearance is achieved through pruning

1 and how long it will take for that tree to grow back
2 into the security zone or the wire protection zone.

3 So it's a combination of loads of
4 different information and tables that allows the
5 vegetation manager to understand, on a percentage
6 basis, how many trees -- if he trims or prunes 100
7 trees, what percentage of those will be
8 out-of-compliance in six years based on the initial
9 clearing distance. So that's my understanding of
10 this document. It actually gives you some hard
11 numbers to work with on your -- on your pruning
12 clearance programs.

13 Q. And is --

14 MS. BOJKO: Again, Your Honor, I move to
15 strike that whole response. You said after that
16 answer you would address my motion of whether this is
17 a proper document. They should have brought this in
18 under Mr. Adams; he's a Duke employee. This
19 gentleman has no basis and tie to this. He talked
20 about it "a bit" which, to me, means he talked about
21 it today with some Duke employees and we have no tie
22 to his testimony that he gave. It wasn't produced in
23 discovery as a document that was related and that he
24 relied on in the context of his discovery and, thus,
25 it's not appropriate for him now to say his testimony

1 was written with this document in mind. And it is a
2 pure hearsay document.

3 MR. McMAHON: I think this is the third
4 or fourth time that Ms. Bojko has accused us of not
5 producing something in discovery. If she would like
6 me to show her the e-mail, we have that.

7 MS. BOJKO: That's not what I said.

8 EXAMINER SANYAL: I know what was meant.
9 Give me a minute.

10 Mr. McLoughlin, I have a question for
11 you.

12 THE WITNESS: Certainly.

13 EXAMINER SANYAL: While preparing for
14 your testimony in this case, did you review this
15 document?

16 THE WITNESS: If I did, I don't recall
17 it. I reviewed a lot of documents they sent me, but
18 the growth study was -- I've often heard it referred
19 to. I'm not testifying here on pruning. I'm not an
20 expert, per se, on pruning. So I really, if I looked
21 at the document, I just looked at it for simple
22 interest. I did not see this document as part of my
23 ECI work. This document was prepared by ECI just for
24 the client.

25 EXAMINER SANYAL: And when did you review

1 this document?

2 THE WITNESS: I can't -- within the last
3 few months. They've often sent extraneous material
4 to review, other people's testimony, et cetera, but
5 this particular document and there's another one,
6 there were two growth studies, I can't remember when
7 I reviewed them. I first came in contact with them
8 through Duke, not through ECI.

9 EXAMINER SANYAL: Mr. McMahon, can you
10 clarify the purpose for which you are using this
11 growth study at the moment?

12 MR. McMAHON: To explain the difficulty
13 and impracticality in trying to maintain trees at
14 certain heights along a high-voltage transmission
15 line.

16 EXAMINER SANYAL: Ms. Bojko, so we have
17 not admitted this into evidence yet. You will have
18 an opportunity, during recross, to make clear that
19 this document was not prepared by the witness which
20 is one of your primary concerns. So, at this time,
21 I'm going to let Mr. McMahon continue. And the
22 Commission can give it -- after your recross it will
23 be clear on the record as to what aspects this
24 document was used by the witness, so the Commission
25 can give it the weight it deserves.

1 Do you have any questions? It looks like
2 you may have them.

3 MS. BOJKO: No, Your Honor. I'm just
4 going to offer my continuing objection so I don't
5 have to object to everything.

6 EXAMINER SANYAL: Sure.

7 MS. BOJKO: My concern is not that he
8 didn't author it. It's hearsay. It's not allowed
9 into the record. And him discussing it or talking
10 about it as if it's true, is a hearsay concern. It's
11 not -- it's pure hearsay. It's under Rule 802. So I
12 want to make that clear. So I'm going to have an
13 ongoing objection to him talking about a document
14 that he just admitted he had a cursory interest in
15 and that he didn't review it in preparing his
16 testimony. So it's hearsay. That's my objection.
17 It's not for the other items.

18 EXAMINER SANYAL: Okay. Your objection
19 shall be noted. We will continue at this time and we
20 will take it up, after your recross, whether this is
21 admitted or not.

22 So, proceed.

23 Q. (By Mr. McMahon) Mr. McLoughlin, are you
24 aware whether Duke Energy Ohio uses documents like
25 this growth study, marked as Exhibit 4, in its

1 vegetation management program?

2 A. I wouldn't see why not. There's a
3 tremendous amount of information here. It's
4 developed for distribution but it has applications
5 anywhere.

6 Q. When you say "anywhere," are you
7 referring to transmission lines?

8 A. Transmission as well. If you're doing
9 pruning on transmission, the pruning would be
10 applicable on higher-voltage lines even though this
11 document was produced for distribution.

12 MS. BOJKO: Well, Your Honor, now I'm
13 going to object beyond hearsay. He's just admitted
14 that this document is for distribution and it was
15 created for distribution. We are not talking about
16 distribution facilities, as Duke has stated many
17 times through this proceeding.

18 EXAMINER SANYAL: I'm going to overrule
19 because I think he corrected himself and said it also
20 applies to transmission. Let's move on.

21 Q. There may be another way to clarify that
22 issue. Whether the line is distribution or
23 transmission, does that affect how a tree grows?

24 A. No.

25 MS. BOJKO: Your Honor, may I have the

1 prior question read back and his answer, please?

2 EXAMINER SANYAL: Sure.

3 (Record read.)

4 MS. BOJKO: Thank you.

5 Q. (By Ms. Bojko) Mr. McLoughlin, could you
6 take a look at Table 13, please. It's on page 20 of
7 24.

8 A. I have it.

9 Q. How does the information reflected in
10 Table 13 relate to the concept of pruning along a
11 high-voltage transmission line?

12 A. Well, it gives you the clearances in feet
13 initially obtained and then the cycle of different
14 years on what percentage of those trees would be
15 inside the wire clearance zone. That's how I read
16 it.

17 MS. BOJKO: Objection. Lack of
18 foundation for the question. It's not clear to me
19 that this is applying to transmission clearances
20 which are different than distribution clearances.

21 MR. McMAHON: I think we've already
22 established that the report itself does not
23 specifically relate to transmission, but the concept
24 of growth does, so I'm asking how this information
25 reflects to pruning along a transmission line.

1 MS. BOJKO: But the column on the left is
2 "Clearance," and the clearances, which judge whether
3 you would have to trim at particular intervals, would
4 be different based on transmission facilities versus
5 distribution facilities.

6 MR. McMAHON: The left-hand column is
7 simply "feet."

8 MS. BOJKO: Right. There's a 15-foot
9 clearance for transmission. There's only a 10-foot
10 clearance for distribution. So the amount of the
11 tree that you would have to trim to achieve the
12 clearance in each year of that cycle would be
13 different depending on whether you're trying to meet
14 a 15-foot clearance versus a 10-foot clearance. It's
15 apples and oranges.

16 EXAMINER SANYAL: Mr. McMahan, do you
17 have a follow-up?

18 MR. McMAHON: A follow-up response?

19 EXAMINER SANYAL: Because, if not, I have
20 a questions for the witness.

21 MR. McMAHON: Go ahead.

22 EXAMINER SANYAL: Okay. Mr. McLoughlin,
23 could you explain to us what the "Clearance (feet)"
24 on the left-hand column, what that means to you and
25 whether it would be different for distribution versus

1 transmission.

2 THE WITNESS: It's the clearance from a
3 defined point. So you take off, say, 10 feet of
4 clearance, you get 10 feet of clearance, you prune it
5 back 10 feet. In one cycle, 10.6 percent of the
6 trees will be back into the -- into that zone. So
7 it's irrespective of what kind of line it is, the way
8 I read this.

9 So if you go into the following year,
10 30 percent of the trees now are --

11 EXAMINER SANYAL: Which line are you --

12 THE WITNESS: This is at 10 feet. You go
13 to a clearance of 10 feet. That means you go back
14 and clear 10 feet away from the zone. The first year
15 of the cycle, 6.4 percent of the trees that were so
16 pruned will now be grown back into that -- into the
17 zone. The following year it's 23.9 percent. The
18 following year it's 38.5. It keeps going up.

19 So it gives you hard data on a system
20 approach. Of course, on distribution, you're dealing
21 with tens of thousands of trees, so an approach like
22 this is perfect. It gives you percentages, on
23 average, of how many trees will be able to grow back
24 into the conductors after a specified time after a
25 specified clearance that was achieved.

1 EXAMINER SANYAL: But, Mr. McLoughlin,
2 the numbers here would not differ whether it was for
3 transmission or distribution.

4 THE WITNESS: It's just the growth of the
5 trees to a specified point.

6 MS. BOJKO: Your Honor, I'm sorry, I
7 misunderstood the chart. With that explanation, I
8 withdraw my objection.

9 EXAMINER SANYAL: Thank you.

10 Q. (By Ms. Bojko) So staying at that line
11 clearance of 10 feet, just to do a little quick math,
12 Mr. McLoughlin, are you suggesting that if there are,
13 say, a thousand trees that are pruned back to
14 10 feet, in the third year of the cycle 385 trees
15 would have grown back into that clearance?

16 A. That's right. 38.5 percent.

17 MS. BOJKO: Objection. I'm going to
18 object this time that this mischaracterizes the
19 document. Table 13 applies purely to top-pruned
20 trees only. It does not apply to all trees as
21 Mr. McMahon just suggested in his question.

22 EXAMINER SANYAL: Just rephrase your
23 question.

24 Q. Okay. If there are 1,000 trees on the
25 transmission line that are, as Ms. Bojko said here,

1 Table 13, top pruned back to 10 feet, this table
2 reflects, in Year 3, 385 of those trees would have
3 grown back into the clearance.

4 A. That's right. That's correct. That's
5 how it's read.

6 Q. And how does the information contained in
7 Table 13 then reflect the Company's ability to
8 maintain, for example, only a 15-foot minimum
9 clearance in its border zone?

10 MS. BOJKO: Objection.

11 EXAMINER SANYAL: Grounds?

12 MS. BOJKO: Now he's using this to prove
13 the truth of the matter asserted related to the
14 Complaint case itself.

15 EXAMINER SANYAL: Mr. McMahon.

16 MR. McMAHON: I am attempting to have the
17 witness explain how this growth study is relevant for
18 the purpose of the Complainants have all articulated,
19 in their written testimony, their interpretation of
20 the Company's program is that the Company is only
21 supposed to prune to 15 feet and nothing more.

22 Whereas, there are other witnesses who have explained
23 that is the minimum clearance. And I'm trying to get
24 the witness to explain the practical impossibilities
25 of maintaining a particular 15-foot clearance in a

1 border zone.

2 MS. BOJKO: Objection. I object to his
3 summarizing the testimony and testifying. It should
4 be stricken from the record.

5 EXAMINER SANYAL: I'm going to overrule
6 your objections; both of them. We have a continuing
7 objection with regard to hearsay --

8 MS. BOJKO: Thank you.

9 EXAMINER SANYAL: -- for this document,
10 so that's already noted.

11 So, Mr. McMahon, you may continue.

12 A. Well, basically this document shows that
13 when you do clear to 15 feet, even in the first cycle
14 you'll have a few trees being able to grow 15-feet
15 back. In the next cycle, 4.1 percent; next cycle,
16 11.2. It shows that it's inadequate. So you -- you
17 -- you're dealing with percentages here. A certain
18 percentage of trees will grow back immediately
19 almost; a certain other percentage will take much
20 longer. So, you know, any given tree will be a
21 variance of this. But on average, over a system, if
22 you're managing a system, these are the types of
23 numbers you would look at.

24 Q. And like you indicated, if you're
25 managing a system as in this case, hundreds of miles

1 of high-voltage transmission lines, these numbers
2 would be extrapolated out and applied to the entire
3 grid.

4 A. That's correct. That could well be done.

5 Q. In response to one of Ms. Bojko's
6 questions about minimum clearance, you used the
7 phrase "at all conditions at all times." What did
8 you mean by that?

9 A. Well, that's a NERC requirement that
10 irrespective of the MVCD, the minimum vegetation
11 clearance distance, irrespective of 2.3, there can be
12 no contact, flashover, et cetera, under all
13 conditions at all times. So that means you're on --
14 you're on -- you're forewarned. Just because the
15 line was outside or the tree was outside that MVCD
16 and a flashover occurred, you're still in the wrong.
17 You're still going to have a penalty.

18 So they didn't want to argue the
19 specifics of the 2-point -- who's going to measure it
20 and when is the measurement taken. No. You're
21 responsible for that line. Any flashover is
22 indication that your vegetation management was not
23 sufficient. So they inserted a clause "under all
24 conditions at all times" you have to maintain
25 clearances that will avoid any discharge of

1 electricity and a failure of the line.

2 Q. Okay. Could you turn to page 15, please,
3 of your testimony. Actually, hold on.

4 MS. BOJKO: I'm sorry, page 15?

5 MR. McMAHON: I may have said the wrong
6 page. Hold on a second. Sorry.

7 Q. Page 20. I'm sorry. Line 11. Just
8 directing you to line 11. I believe in response to
9 one of Ms. Bojko's questions in talking about the
10 version of the FAC, that standard, I don't know, did
11 you say "3" in response to her question versus "2" in
12 your written testimony?

13 A. I may have. I believe it was 2, Version
14 2, where the Gallet equation first appeared. It was
15 also in 3. But I think my testimony here is correct.
16 I may have said FAC-003-3 but misspeaking.

17 Q. Okay. And then also turn to page 11,
18 please. Around line 15, I believe Ms. Bojko asked
19 you about the effect of removing trees on erosion.
20 Do low-growing -- does low-growing vegetation also
21 prevent erosion?

22 A. Oh, very much so.

23 Q. How so?

24 A. The root systems tightly bind the soil.
25 The aboveground mass of plants intercept rainfall.

1 So what it has is a tendency to keep the soil in
2 place with this low-growing vegetation. It's
3 undisturbed.

4 Q. And on that last reference to
5 disturbing -- or undisturbed, I should say -- I think
6 in response to Ms. Bojko's question about removing
7 trees, you referenced that it needs to be done in a
8 certain manner and something about disturbing the
9 soil.

10 A. Right. If you're on a steep slope and
11 you're cutting down trees, if you're using heavy
12 equipment to remove the tree boles or limbs, you're
13 going to disturb the soil, so you're going to offer
14 greater potential for soil erosion.

15 If you leave the trees in place and buck
16 up the bole and limit and top it, leave all the
17 branches on the ground, the chances of soil erosion
18 are minimal even though you cut the tree down. The
19 soil is undisturbed, the sunlight is now hitting the
20 soil, many low-growing plants will now flourish, and
21 the tree branches themselves, sitting on the soil,
22 help stabilize the soil and keep it from moving. So
23 there are ways to cut trees and minimize soil
24 erosion.

25 MR. McMAHON: Nothing further, Your

1 Honor.

2 EXAMINER SANYAL: Ms. Bojko, whenever
3 you're ready. I assume you'll have a few questions.

4 MS. BOJKO: Just a few, Your Honor. Can
5 we just have one moment?

6 EXAMINER SANYAL: Sure. Let's go off the
7 record.

8 (Off the record.)

9 EXAMINER SANYAL: Let's get back on the
10 record.

11 Ms. Bojko, you can proceed.

12 - - -

13 RECROSS-EXAMINATION

14 By Ms. Bojko:

15 Q. Sir, you referenced costs for trimming
16 and pruning in your response to one of Mr. McMahon's
17 questions. Do you recall that?

18 A. I believe so.

19 Q. Sir, isn't it true that if Duke would
20 continue to trim and prune as they had in the past,
21 that it would cost \$7,000 per mile; whereas, if Duke,
22 under Duke's new proposal, the integrated vegetation
23 management plan, that would cost consumers \$36,000
24 per mile?

25 A. These may be average costs. I'm not

1 aware of those specific costs but, on average, where
2 you have a lot of work to do, it can -- IVM can cost
3 more, particularly upfront, when you're reclaiming
4 the property.

5 Q. Thank you.

6 A. Then the costs come down as the
7 low-growing vegetation helps you manage the property.

8 Q. So let's turn now to the DEO Exhibit 4
9 that you referenced today. Just to be clear, you did
10 not attach that to your testimony?

11 A. Which one now?

12 Q. DEO Exhibit 4, the growth analysis.

13 A. That's right, I did not.

14 Q. All right. And, sir, you did not cite to
15 this growth analysis in your testimony, true?

16 A. That's correct.

17 Q. And, sir, are you familiar with a request
18 by Complainants to describe the documents that you
19 relied on in preparing your testimony which states
20 that you did not rely on this in preparation of your
21 written testimony?

22 A. That's correct, I did not rely on that
23 document.

24 Q. And it's also true that this report was
25 prepared for Duke Energy, Charlotte, North Carolina?

1 A. That's correct. The one you have, that's
2 correct.

3 Q. And, sir, you're aware that Duke Energy,
4 Charlotte, North Carolina, is a distribution company;
5 is that correct?

6 MS. WATTS: Objection. Sorry.

7 MR. McMAHON: Objection.

8 EXAMINER SANYAL: Grounds?

9 MR. McMAHON: First of all, I'm not even
10 sure an entity exists that is known as Duke Energy
11 Charlotte. That's just a location of an office.

12 MS. BOJKO: Well, Your Honor, it says it
13 was prepared for Duke Energy, Charlotte, North
14 Carolina. I'll rephrase. Thank you.

15 Q. (By Ms. Bojko) Mr. McLoughlin, this
16 states this was prepared for Duke Energy Charlotte,
17 correct?

18 A. Correct.

19 Q. And it's your understanding that this
20 document was prepared for a distribution system,
21 correct?

22 A. That's correct.

23 Q. And given that this is a distribution
24 system, the NERC standards that we've been talking
25 about today that's in your testimony, FAC-003-4 or

1 any prior versions, those do not apply to this; is
2 that correct?

3 A. No, not really.

4 Q. And, sir, isn't it true that the table
5 that you referenced is in the context of -- excuse
6 me -- is in the context of providing simulation
7 constraints? So it's a simulation, not actual data.

8 A. There's some actual data and then there
9 was simulations performed.

10 Q. But specifically through Table 13 that
11 you referenced, it states that this is a simulation
12 of tree contact percentages, correct?

13 A. Correct.

14 Q. So this is not actual data.

15 A. Well, my understanding is there's, of
16 course, actual data behind the simulations.

17 Q. Okay. And this is simulating constraints
18 on a system at different -- with different variables,
19 the different tables.

20 A. Yup.

21 Q. So let's look at the charts that are
22 throughout this report. At least the tables indicate
23 the probability of a tree trimmed to a given
24 clearance regrowing to a point where it could contact
25 the power line; is that correct?

1 A. Would be back inside the zone, I believe.
2 It was cleared back 15 feet and then it would be back
3 into the zone that was restrictive.

4 Q. Okay. So it's not actually contacting
5 the power line; it's --

6 A. It might, depending on where the power
7 line was at that time, but it is to that point.

8 Q. It would enter the minimum clearance
9 zone, so to speak.

10 A. Something of that sort.

11 Q. Okay. So you would agree with me that
12 this is -- looking at these charts at the initial
13 clearance increases provided for in the charts, the
14 likelihood of a tree actually growing back to the
15 point where it could contact the wire is minimal.

16 A. I'm not sure of that. These are
17 distances. That's why it's -- it's -- you take these
18 distances as they are. They're percentages. So
19 after clearing back 15 feet, after one year how soon
20 is that tree going to be back in the zone. It's
21 15 feet out, now it's going to be back in .3.

22 Q. Okay.

23 A. All right? Then you go on and, over a
24 six-year cycle, 36 percent of the trees that you have
25 pruned back 15 feet will have grown 15 feet.

1 Q. Well, not all trees. Just those that are
2 top pruned, correct?

3 A. Yeah. And each one has a different table
4 for different --

5 Q. Right. And --

6 A. -- conditions. Urban trees versus
7 suburban trees versus rural trees, versus top pruned
8 versus side pruned. There are all tables that get to
9 these different issues.

10 Q. Okay. And Mr. McMahon directed your
11 attention to the one that has a great percentage of
12 encroachment on the clearance in the six-year cycle,
13 correct? All the other ones are a lot less
14 percentage for a six-year cycle, correct?

15 A. Well, I'd have to look through all the
16 tables; there's many of them. It would seem that the
17 topping, which is routinely done on transmission
18 lines, which might be the most appropriate table to
19 use, is the most conservative.

20 Q. "The most conservative," you mean --

21 A. In the sense that you only get out about
22 three or four cycles and you're way into high
23 percentages of 15 feet.

24 Q. Right. So I thought we discussed earlier
25 in your testimony that you would not top a tree, that

1 that was a bad word in the arborist and forestry
2 industry.

3 A. Well, what happens when a tree is
4 directly under the conductors, it's called "crown
5 reduction."

6 Q. Right.

7 A. What it actually is, is removing the
8 crown. It's sort of topping the tree. There's no
9 other way to describe it.

10 Q. So you would recommend tree topping which
11 means cutting off a tree right at the top?

12 A. When a tree is underneath the conductors,
13 right underneath the conductors, you have to take
14 every -- all the biomass, all the limbs off at a
15 certain height --

16 Q. Okay.

17 A. -- to get the clearances. The result of
18 that is topping.

19 Now, if the tree is further away, you're
20 doing some side trimming, you can use the Shigo
21 method more effectively. But underneath the power
22 lines, you have no choice.

23 Q. Okay. Well, let's talk about the other
24 scenarios. Let's talk about some of the other
25 tables. So if we go to Table 14 which is Ohio State,

1 so related to Ohio; is that correct?

2 A. That's correct.

3 Q. And this talks about the clearances for
4 urban trees; so it doesn't talk about a specific type
5 of a tree or a specific cut, correct?

6 A. Yes.

7 Q. And this, in the six-year cycle, it says
8 only 11 percent in 15 years would possibly grow back,
9 correct?

10 A. That's correct.

11 Q. And, sir, this table only goes to 15-foot
12 clearance; is that correct?

13 A. That's correct.

14 Q. They didn't tell us what happens if you
15 cut a tree back to 16 feet or 20 feet, correct?

16 A. Correct.

17 Q. Is it reasonable to assume, sir, that the
18 probabilities would further decrease if the initial
19 clearance were higher, say 20 or 25 feet?

20 A. If the initial clearance?

21 Q. Was higher.

22 A. If you're actually clearing back more --

23 Q. Right.

24 A. -- of the tree. Certainly it would buy
25 some more time that way.

1 Q. Okay. And you also told us earlier that
2 topping a tree, in the manner that you just
3 described, increases regrowth rates, correct?

4 A. Yes.

5 Q. And you also told us there are proper
6 pruning methods that would significantly reduce the
7 regrowth rates, correct?

8 A. That's correct.

9 Q. So if a pruning method is different than
10 the one used to gather the data or the simulation in
11 Table 13, the percentage of trees that regrow into
12 the wire zone would be lower or into the minimum
13 clearance zone would be lower.

14 A. It possibly could.

15 Q. And you would agree that different trees
16 have different growth rates, correct?

17 A. That's correct.

18 Q. And every tree would have a different
19 level of regrowth rate over a six-year period,
20 correct?

21 A. Every different tree species has its own
22 characteristics for regrowth.

23 Q. And if a tree used growth inhibitors,
24 then that would also affect the regrowth rate,
25 correct?

1 A. That's correct.

2 Q. So the tables and charts referenced in
3 Duke Exhibit 4, they're based on an average of all
4 species, correct?

5 A. That's correct.

6 Q. And even though in Appendix A to the
7 study it lists the regrowth rates for each species,
8 that was not included in the study, correct, or in
9 the tables?

10 EXAMINER SANYAL: Ms. Bojko, where is
11 Appendix A?

12 MS. BOJKO: It's on page 14, Your Honor.

13 A. I think that was part of the study. That
14 was the -- these are the observed regrowth. So this
15 was part of the effort to understand how trees
16 regrow, on a system basis, after different levels of
17 clearance.

18 Q. Right, but I guess what I'm saying is
19 Table 13 that you referenced and we talked about
20 Table 14, those took into account the average of all
21 species.

22 A. Yes.

23 Q. They didn't look at the regrowth rates of
24 each species.

25 A. That's right, that's right.

1 Q. So it would be possible though, by this
2 Appendix, to determine which species have the highest
3 regrowth rates, correct?

4 A. That's correct.

5 Q. And which species have the lowest
6 regrowth rates.

7 A. That's correct.

8 Q. And so, it would also be possible to take
9 trees that have a more aggressive regrowth rate and
10 remove them from the average.

11 A. Possible.

12 Q. And it would be possible to -- and that
13 would affect the regrowth percentages back into the
14 minimum clearance as well, wouldn't it?

15 A. Certainly, if you took out the
16 fastest-growing trees from the equation.

17 Q. Right.

18 Sir, you're also aware that not all trees
19 within a right-of-way, a utility's right-of-way, come
20 within a 15-foot clearance at any point, right?

21 A. They may not now.

22 Q. Well, they may not ever, right? The
23 Arborvitaes that you talked about, if they're on the
24 edge of the wire zone.

25 A. That's true. Again, by species, by

1 location.

2 Q. So for those trees, the percentage would
3 also be different than what's put in these summary
4 charts; is that correct? The minimum clearance. If
5 those trees are not even anywhere close to the
6 15-foot clearance, they would affect the --

7 A. They wouldn't be trimmed.

8 Q. Okay. They would be outside.

9 A. They would be outside the pruning
10 distance that was required.

11 Q. Let's look at another table. There's a
12 Table 12 on the page prior. Now, this is for a
13 side-pruned tree; is that correct?

14 A. Correct.

15 Q. And for this side-pruned tree at a
16 six-year cycle, to come back into the 15-foot
17 clearance, it's only .4 percentage.

18 A. Correct.

19 Q. And if you look at the table above,
20 Table 11, that table is pertaining to a single phase
21 which is a designation of a distribution facility,
22 correct?

23 A. Correct.

24 Q. So that wouldn't be applicable to the
25 Complaint case, correct?

1 A. Well, again, it's just distances from
2 that phase, so it's just distances of the growth. So
3 you look at how much was pruned and the cycle time to
4 get it to grow back. It's just a percentage to a
5 point. So it's tree growth on a percentage basis, so
6 it's applicable to any situation.

7 Q. Let's look at one that says any situation
8 specifically. If you look at Table 10, this is a
9 chart that would be for multiphase. That's for
10 multiphase. So multiphase, in this context, means
11 distribution multiphase, single and dual phases; is
12 that true?

13 A. It possibly could be. I'd have to read
14 the entire report.

15 Q. Just so we're clear, this whole document
16 is regarding -- it's a regional document. It's not
17 particular to Ohio. It's actually Ohio and Kentucky,
18 correct?

19 A. Correct.

20 Q. Even though it says "Ohio & Kentucky," it
21 does say "by Region." I'm assuming "by Region" is
22 greater than Ohio and Kentucky?

23 A. I couldn't comment on that.

24 Q. You don't know because you didn't create
25 the document --

1 A. That's correct.

2 Q. -- and you didn't draft it.

3 MS. BOJKO: That's all the questions I
4 have. Thank you, Your Honor.

5 EXAMINER SANYAL: Mr. Etter?

6 MR. ETTER: No questions, Your Honor.

7 EXAMINER SANYAL: Well, I'm going to just
8 take a quick moment to see if I have any questions.
9 I have a lot of notes.

10 Mr. McLoughlin, I have no questions, so
11 you are excused.

12 THE WITNESS: Thank you.

13 MR. McMAHON: Your Honor, Duke Energy
14 Ohio moves for the admission of Exhibits 3 and 4.

15 EXAMINER SANYAL: So let's take them one
16 by one. Any objections to Exhibit 3?

17 MS. BOJKO: Your Honor, I would only note
18 subject to the motions to strike on his testimony
19 that we've already discussed and that you've granted
20 in part.

21 EXAMINER SANYAL: So Exhibit 3 shall be
22 admitted with the motions to strike that were
23 granted.

24 (EXHIBIT ADMITTED INTO EVIDENCE.)

25 EXAMINER SANYAL: So moving on to

1 Exhibit 4, I believe Ms. Bojko you probably have your
2 continuing objections for hearsay and foundation,
3 correct?

4 MS. BOJKO: And relevancy, yes, Your
5 Honor.

6 EXAMINER SANYAL: And relevance. At this
7 point --

8 MS. BOJKO: I won't repeat those.

9 EXAMINER SANYAL: Go ahead.

10 MS. BOJKO: I just said I wasn't going to
11 repeat those.

12 EXAMINER SANYAL: I think I have a fair
13 idea. I remember your arguments. At this point, I
14 will deny your motion. We will admit it, admit
15 Exhibit 4, for the limited purpose of having
16 additional information on how regrowth is indicated.
17 You were very clear, in your recross, as to the
18 witness's experience with this document, and I think
19 the Commission can review that, review the
20 transcript, and give the exhibit the weight it
21 deserves. So Exhibit 4 is admitted.

22 (EXHIBIT ADMITTED INTO EVIDENCE.)

23 MS. BOJKO: Thank you, Your Honor.

24 EXAMINER SANYAL: So, at this time, I
25 think it's obviously a good time to break. We can be

1 back in an hour, 2:10, or does that not give us
2 enough time? We can be back at 2:00.

3 MS. WATTS: And/or we're ready to keep on
4 going. Whatever your preference is.

5 MS. BOJKO: Your Honor, I would like some
6 kind of a break. I'm willing to come back at 2:00.
7 I need something to eat. I haven't eaten all day. I
8 want to get a taco salad. Oh, is this on the record?

9 EXAMINER SANYAL: I think it's on the
10 record, yes.

11 (Laughter all around.)

12 EXAMINER SANYAL: But yes, for the
13 record, it is "Taco Salad Thursday" downstairs, so.

14 (Laughter all around.)

15 EXAMINER SANYAL: Let's go off the
16 record.

17 (Discussion off the record.)

18 (At 1:10 p.m. a lunch recess was taken
19 until 2:05 p.m.)

20 - - -

1 Thursday Afternoon Session,
2 November 8, 2019.

3 - - -

4 EXAMINER SANYAL: Let's get back on the
5 record.

6 Mr. McMahon, you may proceed with
7 presenting your next witness.

8 MR. McMAHON: Thank you, Your Honor.
9 Duke Energy Ohio calls John Goodfellow.

10 (Witness sworn.)

11 EXAMINER SANYAL: You may be seated.

12 Mr. McMahon, you may proceed.

13 MR. McMAHON: Thank you.

14 - - -

15 JOHN W. GOODFELLOW
16 being first duly sworn, as prescribed by law, was
17 examined and testified as follows:

18 DIRECT EXAMINATION

19 By Mr. McMahon:

20 Q. Could you please state your full name for
21 the record.

22 A. John W. Goodfellow.

23 MR. McMAHON: Your Honor, may we
24 approach?

25 EXAMINER SANYAL: Yes. And you may do so

1 freely during the examination of this witness.

2 MR. McMAHON: Thank you.

3 Your Honor, we'd like to mark
4 Mr. Goodfellow's testimony as Duke Energy Ohio
5 Exhibit 5, please.

6 EXAMINER SANYAL: It shall be so marked.

7 (EXHIBIT MARKED FOR IDENTIFICATION.)

8 MR. McMAHON: Thank you.

9 Q. (By Mr. McMahan) Mr. Goodfellow, do you
10 have in front of you what's been marked as Exhibit 5?

11 A. I do.

12 Q. And Exhibit 5 is a copy of your written
13 Direct Testimony that you assisted in preparing and
14 that was filed with the Commission in this case?

15 A. It is.

16 Q. If I was to ask you all of the questions
17 in your written testimony, would you give me the same
18 answers today?

19 A. Yes.

20 Q. And is your written testimony still
21 accurate?

22 A. It is.

23 Q. Do you have any changes to make?

24 A. No, sir.

25 MR. McMAHON: Your Honor, the Company

1 tenders Mr. Goodfellow for cross.

2 EXAMINER SANYAL: Thank you.

3 Mr. Dressel, you may proceed.

4 - - -

5 CROSS-EXAMINATION

6 By Mr. Dressel:

7 Q. Good afternoon, Mr. Goodfellow.

8 A. Good afternoon.

9 Q. How are you doing today?

10 A. Just fine.

11 Q. I just want to clear up something you
12 just said, that you assisted in preparing your
13 testimony. Is it fair to say that the testimony was
14 prepared by you?

15 A. I wrote it.

16 Q. Thank you, Mr. Goodfellow.

17 MR. DRESSEL: Your Honor, we may have a
18 motion to strike, but I have a few clarifying
19 questions before we proceed to that.

20 EXAMINER SANYAL: Sure. Go ahead.

21 Q. Mr. Goodfellow, you received a Bachelor
22 of Science degree in Environmental Resources
23 Management from the State University of New York,
24 right?

25 A. I did. And I'm not an EE, an electrical

1 engineer, if that's where you're going. I'm really
2 looking at this clock. Does that help speed it
3 along?

4 Q. Sure.

5 MR. DRESSEL: With that, Your Honor, we
6 would move to strike Mr. Goodfellow's testimony
7 beginning on page 5, line 17. On that page -- on
8 that line starting with "The system" and then
9 continuing through page 6, line 11.

10 Your Honor, this motion to strike is
11 being made under Rule 702 of the Ohio Rules of
12 Evidence. Per that Rule, a witness who offers a
13 technical conclusion must have sufficient education,
14 training, knowledge, skill, or experience to offer
15 that conclusion.

16 We agree, based on Mr. Goodfellow's
17 experience in the industry, he is able to offer
18 testimony related to the possibility of arcing or
19 flashover on electric transmission lines, or even
20 observe distances at which it is understood in the
21 industry that such an event could occur. But the
22 testimony we've drawn the Bench's attention to in
23 this instance delves into the technical causes of
24 those events, discussing specifically the impact that
25 trees may have on influencing the shape of an

1 electric field.

2 Mr. Goodfellow's not an engineer, as he
3 just told us, and has not established foundation to
4 offer this highly-technical testimony regarding
5 electric fields. Thus, he has not met the
6 qualifications, under Rule 702, to establish
7 foundation for such an opinion through his knowledge,
8 experience, education, training, or skill.

9 MR. McMAHON: Your Honor, Mr. Goodfellow,
10 all he said was he's not an electrical engineer.
11 Counsel hasn't otherwise asked him any questions
12 regarding his knowledge, experience, training, skill,
13 work history in these areas.

14 MR. DRESSEL: May I respond to that, Your
15 Honor?

16 EXAMINER SANYAL: Yes, you may.

17 MR. DRESSEL: We're looking at the lack
18 of foundation for that in the testimony that was
19 filed. Based on the testimony that was filed,
20 stating Mr. Goodfellow's experience and work in this
21 field, we don't believe that testimony establishes
22 sufficient foundation.

23 EXAMINER SANYAL: Your response?

24 MR. McMAHON: We can clear that up
25 probably with a few questions, Your Honor.

1 EXAMINER SANYAL: I will allow you to ask
2 those questions.

3 MR. McMAHON: Okay. Mr. Goodfellow,
4 excuse me, looking at the testimony that Counsel
5 referred to from page 5, line 17, through page 6,
6 line 11. Can you explain, to the Bench, your
7 knowledge, work history and experience that would
8 allow you to provide that testimony in this case?

9 THE WITNESS: Yes. I'm recognized as a
10 leading authority on the way trees conduct
11 electricity. I've done a number of research products
12 for the Electric Power Research Institute dealing
13 with that issue. In particular, the project that was
14 described here, I was the vegetation management
15 specialist on the team that did the research. I
16 provided a great deal of the background on the tree
17 forms and the way trees conduct current.

18 And I also would say, in the course of my
19 career, I have been directly responsible for
20 management, operation, and construction of
21 transmission electric and gas lines. So I have both
22 the direct experience through the EPRI engagement,
23 and I'm not mentioning a number of my research
24 projects, but also practical experience in the
25 industry.

1 MR. McMAHON: Okay.

2 EXAMINER SANYAL: Based on the
3 witness's -- I'm sorry -- based on what the witness
4 has just testified to, I'm going to deny that motion
5 to strike.

6 MR. DRESSEL: Thank you, Your Honor.

7 EXAMINER SANYAL: Do you have another
8 motion?

9 MR. DRESSEL: Not at this time, Your
10 Honor.

11 EXAMINER SANYAL: Okay. Then you can
12 proceed with cross.

13 Q. (By Mr. Dressel) Mr. Goodfellow, I would
14 like to try to understand the scope of your work that
15 you performed in this case. You testified in your
16 testimony on page 2, line 9 -- are you there?

17 A. I am now.

18 Q. You testified that your role in this
19 case, after being retained by Duke Energy Ohio as a
20 testifying expert, was to provide the Public
21 Utilities Commission of Ohio with information based
22 on your experience that will help it render an
23 informed decision.

24 Now, as part of preparing your testimony
25 for this case and doing your work in this case, did

1 you visit the area at issue here?

2 A. I did.

3 Q. Did you speak with Complainants who had
4 issues with Duke's implementation of its vegetation
5 management program?

6 A. Directly, no.

7 Q. Did you speak with Duke's arborists or
8 consultants who communicated with Complainants about
9 the issues?

10 A. Yes, I did.

11 Q. And in doing so, did you visit specific
12 locations, along the transmission lines at issue in
13 this case, to evaluate the trees and other vegetation
14 that is at issue in this proceeding?

15 A. In the interest of time, I would say that
16 I was with Mr. McLoughlin. We were on the site, we
17 did observe the conditions, so his testimony is
18 fairly complete. I would say I essentially did the
19 same thing.

20 Q. Respectfully, Mr. Goodfellow, I need to
21 determine what your involvement was by asking you
22 these questions. I appreciate the interest in time,
23 but we do need to get a full set of information here.

24 A. All right. Allow me to respond.

25 I was on site on March 7th. We reviewed

1 the locations. I was in a vehicle with
2 Mr. McLoughlin and others in this room. We looked at
3 the facilities, the circuit where the work had been
4 performed up until the point that the work was
5 stopped, and we looked at the locations where work
6 was yet to be performed. We viewed it from the road
7 crossings, occasionally walked in, we used field
8 glasses. Essentially what Mr. McLoughlin told you.

9 Q. So you're saying your assessment of the
10 lines was largely done in a vehicle, right?

11 A. We used a vehicle to get to the road
12 crossings. I got out of the vehicle if that's your
13 question.

14 Q. So when you got out of the vehicle, did
15 you walk the entire length of the transmission lines
16 that are at issue?

17 A. I think I was clear. I said no, I did
18 not.

19 Q. So to what extent did you assess the
20 transmission lines when you were outside of the
21 vehicle?

22 A. Fair question. We walked as far as we
23 needed to to have a view down the right-of-way to see
24 either the next crossing or an angled structure.

25 Q. So did you visit any of the specific

1 properties of Complainants in this case?

2 A. I'm sure we did.

3 Q. Do you know which Complainants those
4 would be?

5 A. Not off the top of my head, but since I
6 looked at probably 90 percent of the corridor, I
7 would say the majority of them.

8 Q. Did you actually enter onto Complainants'
9 properties to view the trees and vegetation that are
10 at issue in this case?

11 A. No. We clearly did not walk onto private
12 property amongst the Complainants.

13 Q. So your assessment of Complainants'
14 properties, to the extent that it occurred, which
15 you're saying you don't remember if it specifically
16 did or for whom it specifically did, would have been
17 through observing those properties, through road
18 crossings, using field glasses?

19 A. And to the point within a right-of-way
20 where we could walk far enough and not walk onto a
21 Complainant's property. I remember several locations
22 where we walked in a span or so.

23 Q. So when you were viewing the vegetation
24 from whatever angle you may have for a specific
25 property, were you able to get close enough, either

1 in person or using the field glasses, to ascertain
2 what sorts of pruning methods had been used during
3 Duke's previous vegetation management work on those
4 properties?

5 A. Yes.

6 Q. And what did you observe?

7 A. The work that was performed -- the way
8 you asked the question, really there's two answers.

9 We looked at the work that had been
10 performed weeks and months prior on the particular
11 project, and I looked at the placement of pruning
12 cuts, the amount of clearance achieved, and found
13 they were compliant with the current sets of
14 standards.

15 We looked at the locations that had yet
16 to be worked on, and I observed that the clearances
17 were, in my opinion, inadequate, and proper
18 clearances weren't achieved at the time of pruning.
19 I also saw what I considered inappropriate pruning
20 methodology.

21 Q. So, in some cases, you observed that
22 pruning that had been done by Duke or its contractors
23 in the past had been inadequate.

24 A. Yes.

25 Q. In some cases it was adequate.

1 A. Yes. When we say "in the past," as I
2 said there was work performed on this circuit before
3 Duke was enjoined or asked to stop, so I looked at
4 that which is prior but within months, and I could
5 also see, based on the existing vegetation, what kind
6 of work had been performed the last time preventative
7 maintenance had been conducted on a number of the
8 sites.

9 Q. So when you say that you were observing
10 work that had been performed in the months leading up
11 to Duke ceasing the work, are you referring to work
12 done under Duke's current proposed plan or pruning
13 done under Duke's previous practice of trimming and
14 pruning trees along the transmission wires?

15 A. Fair question. My understanding is the
16 circuit is some dozen miles in length, and 6 or
17 7 miles had been completed using the new
18 methodologies being proposed and at issue in this
19 proceeding, so I looked at their intended practice.

20 Q. And earlier you mentioned that you
21 observed that some pruning was done to industry
22 standards, I believe?

23 A. Yes.

24 Q. What standards are you referring to?

25 A. In that particular case, it would ANSI

1 A300 Part 1.

2 Q. Okay. Thank you.

3 It's your understanding that the ANSI
4 standards in general, you reference two other ones, I
5 believe, Part 7 and Part 9 in your testimony?

6 A. Correct.

7 Q. It's your understanding that those
8 standards are published by the American National
9 Standard Institute, right?

10 A. Yes.

11 Q. And as far as you know, those standards
12 are voluntary.

13 A. It clearly states that in the preamble.

14 Q. So those standards have not been adopted
15 by the Federal Energy Regulatory Commission as far as
16 you know?

17 A. No, they have not.

18 Q. And as far as you know, those standards
19 have not been adopted by the Public Utilities
20 Commission of Ohio.

21 A. I don't know that.

22 Q. And as far as you know, a utility that
23 did not comply with any of those standards, or any
24 party that didn't comply with any of those standards,
25 would not be subjected to any sort of fine or other

1 punishment for not doing so.

2 A. I don't agree with that. What I know to
3 be the case, because I have a number of clients, is
4 that if you do not follow the standards or best
5 practices, you have better have a very good reason,
6 and it has effectively the weight of an official
7 industry standard. In other words, they're widely
8 recognized as the way work is performed in this
9 country.

10 Q. So you're saying that a utility could be
11 fined or punished for not following an ANSI standard?

12 A. No. So let me be clear. I do a fair
13 amount of expert witness work involving electrical
14 injuries because of my standing as an expert in this
15 field, and I can tell you that if the utility is not
16 compliant with the standards and the best practices,
17 then they have a much greater exposure, plaintiffs'
18 counsel will take them to task, and jurors will be
19 swayed by that. So I can tell you, pragmatically,
20 that the industry follows these standards.

21 Q. So you're saying that the industry
22 follows those standards, but that wasn't my question.

23 My question was whether or not there is
24 any agency, governmental agency or anyone that would
25 issue a fine or other punishment to a utility because

1 that utility did not follow a specific ANSI standard.

2 A. I don't think that's actually correct.
3 The A300 standards, yes. But ANSI Z133 is adopted by
4 OSHA. And if you don't follow those standards, you
5 would absolutely be fined.

6 Q. I appreciate that Mr. Goodfellow. I
7 should have been clearer with the question. With
8 regard to the ANSI standards you reference in your
9 testimony, there's no agency that would issue a fine
10 or some sort of punishment for failing to follow
11 those standards, the A300 standards.

12 A. That's correct.

13 Q. Thank you.

14 So based on your assessment in this case,
15 do you believe that Duke Energy Ohio should or does
16 follow all parts of the ANSI A300 standards?

17 A. No; there are ten parts.

18 Q. And you don't believe that Duke is
19 following all ten of those parts?

20 A. Several of them are irrelevant so no, I
21 know that they're not following them.

22 Q. So, Mr. Goodfellow, in your testimony you
23 stated that Part 7 and Part 9 were the two ANSI A300
24 standards that were relevant to this proceeding,
25 right?

1 A. Most relevant, yes.

2 Q. So there are other standards that are
3 relevant but not as relevant; is that what you're
4 saying?

5 A. No. I was here yesterday and I listened
6 to Complainants' expert Back and found he made a
7 number of mistakes, and we're talking about proper
8 pruning so that one became more relevant as I
9 listened to that testimony; that would be ANSI A300
10 Part 1.

11 MR. DRESSEL: Your Honor, we would move
12 to strike the witness's assessment of Mr. Back's
13 testimony as making mistakes. That was not at all
14 responsive to the question that was asked.

15 MR. McMAHON: Mr. Dressel specifically
16 asked which of the ANSI A300 parts may or may not be
17 relevant, and Mr. Goodfellow's answer was responsive
18 to that question. He just gave an example, improper
19 testimony from Mr. Back.

20 EXAMINER SANYAL: I'm going to overrule
21 that. He was answering your question, perhaps in a
22 form that you didn't appreciate, but we'll move on.

23 Q. (By Mr. Dressel) Let's try this
24 Mr. Goodfellow. So you're saying that the ANSI A300
25 Part 1, which is the pruning standard, only became

1 relevant to this case when you saw Mr. Back take the
2 stand?

3 A. To my opinion. It may have been relevant
4 to the case, but not to my opinion.

5 Q. So it may have been relevant to your
6 case -- or, to the case. I'm sorry.

7 A. If I had thought about it more broadly,
8 it would have been. I didn't think that this would
9 be as much about proper pruning as it's been made out
10 to be, and the reason that's important is tree
11 response to pruning, the regrowth response.

12 Q. So in drafting your testimony in this
13 proceeding, you didn't consider the ANSI A300 Part 1
14 standard, right?

15 A. Only because I had seen Duke Energy's
16 previous work and believed they were compliant and
17 the practice of pruning wasn't at issue.

18 Q. All right. Well, let's talk about
19 pruning, Mr. Goodfellow. I'd like to direct your
20 attention, if you could, to page 10 of your
21 testimony.

22 A. I'm there.

23 Q. And if you could specifically look at
24 line 15.

25 A. Yes.

1 Q. Here, on line 15, you are asked "Why Not
2 Simply Continue to Prune These Trees?" Right?

3 A. That's correct.

4 Q. And in response to that question, you say
5 that continued pruning of trees beneath energized
6 transmission conductors creates elevated risk to the
7 facilities and public safety, right?

8 A. Okay. So you did not read that verbatim.
9 So where are we? I would agree with the statement,
10 how's that? We'll move it along.

11 Q. So your exact statement, for the record,
12 was: "In addition, continued height reduction pruning
13 of trees growing beneath energized transmission
14 conductors creates elevated risk to the facilities
15 and to public safety."

16 A. Now I see it, lines 19 through 21.

17 Q. So would you say that in the past, when
18 Duke was engaging in continued pruning of trees and
19 other vegetation along these lines, that they were
20 causing an elevated risk to the facilities or to
21 public safety?

22 A. Yes.

23 Q. And did you review any evidence in this
24 proceeding or in your investigation where you saw any
25 such risk manifest itself during the time that Duke

1 was engaged in pruning along the transmission lines?

2 A. So I have to ask a question. When you
3 say "engaged in pruning," you mean actually in the
4 act of making cuts on a tree or are you talking about
5 evidence of what the previous practice had been?

6 Q. So, Mr. Goodfellow, your testimony was
7 that Duke's previous practices of continually
8 pruning, throughout their clearing cycles, the trees
9 along the transmission lines, created an elevated
10 safety risk. What I'm asking you is what instances,
11 if any, did you see that risk actually manifest
12 itself as a public safety issue.

13 A. It's all across this particular project.
14 So let me be clear based on your
15 reaction. There is some 7 miles of work yet to be
16 performed, 6 miles, 300-some Complainants, right?
17 The clearances between those conductors and trees in
18 several locations caused me to be very concerned and
19 I brought those concerns up to Duke Energy. They've
20 subsequently went out and have done some remediation
21 work or stopgap work, but the kind of clearances I
22 saw are a result of the previous maintenance. That's
23 what I would say, that those conditions were created
24 by previous work.

25 Q. So, Mr. Goodfellow, it would be fair then

1 to say that you did not review any evidence that
2 clearances caused by past pruning practices actually
3 caused any issues to reliability or safety along the
4 transmission lines.

5 A. I need to think about that because you
6 said "actually." I mean, was the risk manifest by an
7 outage or someone being injured, I don't have that
8 information. What I witnessed were conditions out
9 there that caused me to be concerned for system
10 reliability and public safety.

11 Q. So I understand, and it's clear in your
12 testimony that you were concerned. My question was
13 whether you're aware of any outage, any incident that
14 impacted public safety that resulted from the pruning
15 that you're referring to here, and the answer to that
16 question is no, right?

17 A. That's what I said.

18 Q. Now, I would also ask -- or also state
19 that you're not aware of any damage to the
20 transmission facilities caused by trees that had
21 previously been pruned during this time period, are
22 you?

23 A. No.

24 Q. All right. Can you go to the next page
25 of your testimony?

1 A. Yes, sir.

2 Q. If you could look at line 4 on page 11.

3 A. Yes.

4 Q. Here you are asked how repeated pruning
5 of trees beneath transmission conductors creates
6 additional risk, right?

7 A. That's correct.

8 Q. Your first response to this question is
9 to note that Duke Energy has determined a risk
10 tolerance for vegetation less than 7 feet in the wire
11 zone, right?

12 A. That's correct.

13 Q. You go on in that response to discuss
14 mature trees being pruned and when you say "pruned,"
15 you have, in parentheses next to that, "a.k.a.
16 topped." Do you see that?

17 A. Yes.

18 Q. Mr. Goodfellow, are you an arborist?

19 A. I write a number of the requirements and
20 the best practices. I'm not a credentialed or
21 certified arborist; I don't do that work.

22 Q. And you just testified that you're aware
23 of the ANSI A300 Part 1 pruning standards, right?

24 A. That's correct.

25 Q. So you're aware then that "pruning" and

1 "topping" are not synonyms for each other.

2 A. That's correct.

3 Q. You're aware that "pruning" could refer
4 to any form of trimming, right?

5 A. Yes.

6 Q. So if you took a specific tree, a single
7 tree and sawed off a single branch, it would be fair
8 to say that you pruned that tree, right?

9 A. Yeah, I'm tracking you. I'm reading my
10 statement here.

11 Q. But it wouldn't be fair to say that you
12 topped that tree.

13 A. No, what I'm talking about is
14 height-reduction pruning and the slang used sometimes
15 is "topping." Although the practice of topping is
16 often unrelated to Part 1, proper pruning.

17 Q. So the practice of topping you're
18 referring to in height reduction would be taking a
19 tree and just cutting off the top at a certain
20 height, right?

21 A. It wouldn't have to be. No, I wouldn't
22 limit it to that. So my frame of reference here is
23 to talk about trees located directly beneath the
24 conductors which have to be maintained at a height
25 much less than they're genetically programmed to

1 mature at. There's a proper way to do that and
 2 there's an improper way to do that; both of them
 3 involve pruning. One would involve natural pruning
 4 or I think we've heard it described as Shigo pruning;
 5 and the coarser inappropriate way is indiscriminately
 6 topping at a point, "internodal cuts" is what they
 7 call them, but at a fixed distance. The proper way
 8 is to place the cuts looking at the architecture of
 9 the tree. The improper is way to place the cuts at a
 10 fixed distance --

11 Q. So --

12 A. -- like a hedge.

13 Q. Okay. So it would be fair then to say
 14 that Duke Energy or a contractor, or anyone who's
 15 pruning a tree beneath a transmission wire, would not
 16 be left only with the choice to engage in the
 17 improper topping that you just described.

18 A. In fact, that would be inconsistent with
 19 the standard. I would not support that.

20 Q. But there's other forms of pruning. You
 21 mentioned the Shigo pruning, right?

22 A. Well, the kind of pruning that's
 23 described and codified in the standard and described
 24 in the BMP.

25 Q. And it would be possible for Duke or a

1 contractor to engage in that sort of pruning with
2 regard to the trees in this case.

3 A. Yes.

4 Q. And I may have misunderstood what you
5 just said. Were you saying that your assessment of
6 pruning and trimming and whether it's appropriate was
7 only related to trees that were under the
8 transmission wires?

9 A. No. But that was my first, my first
10 concern. Those create the greatest risk of a
11 grow-in.

12 Q. So specifically going back to the topping
13 issue. The risk of doing that or the reason it's a
14 problem and not considered proper in this case is
15 that it would create sort of a flattop on the top of
16 the tree, right?

17 A. So now you're going to the EPRI work
18 where the minimum vegetation clearance distances were
19 established, so I can answer your question a number
20 of ways. If you want to go down that path, I'd be
21 happy to.

22 Q. So specifically that flattop creates an
23 increased risk for what you describe as an air gap
24 flash-across event, right?

25 A. That's correct.

1 Q. Now, Mr. Goodfellow, we've heard what I
2 believe to be the event you're describing described
3 in a few different ways over the last few days.

4 A. Yes, you have.

5 Q. So when you refer to an air gap
6 flash-across event, that is similar to the arcing or
7 flashover that Mr. McLoughlin discussed earlier this
8 morning.

9 A. Yeah, let me be clear. An arc is through
10 air, via a plasma, between two areas of unequal
11 potential. The flashover or flash-across, they're
12 used more or less interchangeably, are one form of
13 the arc.

14 Q. So you'd agree that arcing and flashover
15 and flash-across may have slightly different
16 definitions?

17 A. All of the flash-across would be arcs,
18 all the flashovers would be arcs, but there may well
19 be other kinds of arcs that aren't relevant, frankly,
20 to the issues at hand here.

21 Q. So when we're talking about all those
22 things, whether it's flashover, flash-across, air gap
23 flash-across as you call it, those are all instances
24 or events that could occur whereby electricity jumps
25 from a transmission wire to a nearby object.

1 A. It does not require a direct contact.

2 Q. And you'd agree that if a tree near a
3 transmission wire is not topped improperly that there
4 is less of a risk of an event like that, whether it's
5 air gap flash-across, arcing, or flashover.

6 A. That's a complicated question.
7 Theoretically, yes, there might be some reduction in
8 the likelihood of an arc across the gap between the
9 conductor and the tree based on the form of the
10 crown, yes.

11 Q. And if the form of the crown is a topped
12 crown, that likelihood is greater.

13 A. That's correct.

14 Q. And so, it would follow that if the form
15 of the crown was not topped, the likelihood would be
16 less.

17 A. Yes, and I'm going to try not to be super
18 technical here but there's a gap factor that gets
19 applied and, contrary to what people presume, a
20 pointy-topped tree would present a lower likelihood
21 of an arc across the air to the conductors. It's
22 sort of backwards of what people might guess. The
23 difference isn't significant enough to change the
24 minimum vegetation clearance distances that are
25 reflected in FAC-003.4. They're all based on the

1 worst-case flattop scenario.

2 Q. Okay, so that's good to know. So the
3 distances referenced there would not be increased by
4 the presence of a topped crown.

5 A. I'm not sure that I understand that
6 statement.

7 Q. I'll try again.

8 A. Thank you.

9 Q. You told us that the distances and the
10 minimum vegetation clearance distances, that that is
11 the minimum distance for a tree that is topped.

12 A. Yes.

13 Q. Okay. And topping would be the worst way
14 or the riskiest way to maintain the tree.

15 A. Yeah. Again, I'm trying to move this
16 along but there's another scenario and that is the
17 edge sidewall. So the point is if you have a
18 continuous plane, horizontally or vertically, that's
19 the worst case, right.

20 Q. Okay. And you would agree that a tree
21 could be pruned in such a way that it has neither a
22 vertical nor a horizontal flat angle on the tree,
23 right?

24 A. Likely the first time or two, but again,
25 because they're genetically programmed to mature at

1 height, the crown starts to spread out so it becomes
2 increasingly planar over time.

3 Q. But it's true that pruning could --

4 A. You could shape the tree differently by
5 pruning, yes.

6 Q. So yes, that's a yes to the question, you
7 can shape the tree by pruning?

8 A. Yeah. You're welcome. I'm glad to help
9 you there.

10 Q. And one shape that you could do by
11 pruning would be not to have flat surfaces on the
12 tree.

13 A. Right.

14 Q. Finally in this section, Mr. Goodfellow,
15 in your discussion of trimming and pruning, if you
16 could look at lines 17 to 20.

17 A. Page 11 still?

18 Q. Yes.

19 A. Yup.

20 Q. You say that "As a result, excessive
21 height reduction pruning may be necessary to achieve
22 adequate clearances at the time of pruning and call
23 into question the aesthetic and/or biological
24 viability of the tree as an element of the
25 landscape." Did I read that correctly?

1 A. Yes, you did.

2 Q. Is it your contention then it should be
3 the determination of Duke or any utility that
4 conducts vegetation management that that utility
5 should consider the aesthetic value of the tree in
6 question?

7 A. Generally utilities try to do that, yes,
8 particularly on distribution systems, not so much on
9 transmission systems.

10 Q. So you said in that statement we just
11 read that sometimes, in order to achieve adequate
12 clearances, you might compromise the aesthetic or
13 biological viability of the tree, right?

14 A. Yes.

15 Q. So let's --

16 A. Otherwise, it would look ugly or it would
17 be dead.

18 Q. So let's say we have a tree where you
19 have maintained adequate clearances and a tree where
20 the biological viability of the tree is not an issue,
21 but it doesn't look aesthetically pleasing to Duke or
22 a contractor. Are you saying that lack of aesthetic
23 value would indicate that the tree be removed?

24 A. The recommendation may well be that, out
25 of sensitivity. The assault on the dignity of the

1 tree, believe it or not I'm a tree hugger, I just
2 don't like to see that kind of work. So I would hope
3 that most utility foresters would recognize at some
4 point there's not much left to work with and we
5 should talk to the property owner about the removal.

6 Q. So you're saying that it wouldn't be the
7 property owner's ultimate decision if the only
8 concern was aesthetic value?

9 A. That's true because we haven't talked
10 about IVM yet, but that's what would be the
11 overriding determination.

12 Q. So let's talk about IVM then. The IVM
13 program, that you discuss, focuses on compatible and
14 incompatible vegetation, right?

15 A. That's correct.

16 Q. That's the underlying basis for the
17 entire IVM program you would say.

18 A. One of the core principles, yes.

19 Q. So, in an IVM program, generally
20 incompatible vegetation is removed.

21 A. Yes.

22 Q. And compatible vegetation would remain.

23 A. Yes. And I'm going to inject two words
24 there. So the incompatible vegetation would be
25 removed so that you weren't continuing to try to

1 control it because what you're trying to do is manage
2 for an appropriate cover type that won't require
3 repeated maintenance work, pruning.

4 MR. DRESSEL: Your Honor, I would move to
5 strike that last statement after the answer "Yes."
6 The witness specifically said that he was adding
7 something after he had already answered the question.

8 THE WITNESS: I'll get it in there a
9 little later. Go ahead.

10 MR. DRESSEL: So we would move to strike
11 the testimony. It sounds like the witness agrees it
12 wasn't responsive.

13 THE WITNESS: I'm okay with that.

14 EXAMINER SANYAL: Okay. Well, in that
15 case, let's strike it after "Yes."

16 THE WITNESS: I should let you guys
17 decide.

18 (Laughter all around.)

19 EXAMINER ADDISON: Please do so.

20 THE WITNESS: Sorry.

21 Q. (By Mr. Dressel) Mr. Goodfellow.

22 A. Yes.

23 Q. You think incompatible vegetation is
24 vegetation that has the potential to grow in close
25 proximity with the transmission conductors, right?

1 A. Well, that's based on the actual
2 definition that's found in the standards which is
3 closer to incompatible with the intended use of the
4 site. It's pretty close.

5 Q. Well, it's the definition that you
6 provided in your sworn testimony, right?

7 A. It's an interpretation, that's right. I
8 stand by what I wrote, certainly.

9 Q. So it's your interpretation.

10 A. Yes.

11 Q. And you think by this definition, all --
12 I'm sorry -- most species of trees would be
13 incompatible.

14 A. Yes.

15 Q. So you don't believe that all species of
16 trees would be incompatible.

17 A. True.

18 Q. Mr. Goodfellow, are you aware of whether
19 Duke Energy considers any trees in the wire zone to
20 be compatible?

21 A. I believe that their determination is
22 based on height; 7 feet.

23 Q. So --

24 A. So it's not about species.

25 Q. It's not your understanding that Duke

1 Energy's policy, as stated to customers in this case,
2 was there could be no tree species regardless of
3 height in the wire zone?

4 A. That's not inconsistent with what my
5 definition says. I don't understand why there's a
6 difference there.

7 Q. So it is true then that Duke Energy does
8 not permit any tree species to exist in the wire
9 zone.

10 A. Okay. I'm using deductive reasoning.
11 Trees, with some few exceptions, will mature at
12 heights taller than 7 feet so, by that definition,
13 would be excluded.

14 Q. But you're aware that Duke Energy's
15 documents provided to customers don't contain those
16 exceptions that you just referred to, right?

17 A. Right. They shortcut right to the point
18 that I made. If there's no real chance of a tree
19 maturing at less than 7 feet, then effectively
20 there's no trees that could belong.

21 Q. So this shortcut that you just referred
22 to, would cut down any tree less than 7 feet, right?

23 A. Yes.

24 Q. Even though it could mature at a height
25 taller than 7 feet.

1 A. No, I didn't say that. If -- this is
2 what's gone on for the last two days. This is about
3 the species. So if it's 3-feet tall and it's a
4 Silver Maple, it should be eliminated.

5 Q. Mr. Goodfellow, I'm not asking you about
6 a 3-foot Silver Maple. I'm asking you about a tree
7 species, which you just told me existed, that matures
8 at a height of less than 7 feet.

9 A. I said with some few exceptions, so yes.
10 I think Mr. McLoughlin mentioned Mugo Pine. I would
11 agree that you would not cut down a Mugo Pine.

12 Q. But you would agree that Duke's
13 guidelines would say to cut down that tree.

14 A. Literally, yes. Practically, I don't
15 think that's germane but, you're right, literally it
16 says that.

17 Q. So the guideline they gave to customers
18 says that tree goes.

19 A. Apparently.

20 Q. And you haven't reviewed any information
21 that says, in practice, Duke would allow that tree to
22 stay.

23 A. No, I have not.

24 Q. But ultimately for you, so when we're
25 talking about compatible and incompatible, we're

1 talking about whether or not vegetation poses a risk
2 to transmission lines, right?

3 A. Or will, yes. Or will at maturity, yes.

4 Q. Let's talk about risk. You would say
5 there are two types of risk that trees pose to the
6 transmission system, right?

7 A. I'm not going to say yes, yet. Give me a
8 little bit more.

9 Q. So the first risk is that the tree could
10 grow close enough to a transmission line that it
11 provides a short circuit pathway --

12 A. You're talking about the modes of
13 failure. Now I know what you're talking about.

14 Q. Yes.

15 A. Sure.

16 Q. There are two modes of failure.

17 A. Two modes of failure.

18 Q. So the first mode of failure is a tree
19 could grow close enough to a transmission line that
20 it provides a short circuit pathway to the ground.

21 A. Yes.

22 Q. And this would be the air gap
23 flash-across phenomenon that we discussed a little
24 bit earlier.

25 A. Yes.

1 Q. And this air gap flash-across can occur
2 either from direct contact with a transmission line
3 or by a flash-across distance of a certain amount,
4 right?

5 A. Technically, I think you got confused
6 with your question. A direct contact doesn't result
7 in an air gap flash-across, but yes.

8 Q. One moment, Mr. Goodfellow.

9 Mr. Goodfellow, if you could please
10 direct your attention to your testimony on page 3.

11 A. Yes.

12 Q. If you could look on line 8, starting
13 with the first full sentence on that line. It says,
14 "The electrical mode of failure describes
15 circumstances where the tree provides a short circuit
16 fault pathway. This can occur either by direct
17 contact between a tree and an energized conductor or
18 by an air gap flash-across," right?

19 A. Oh, definitely.

20 Q. So the other mode of failure that you
21 discussed is a mechanical failure, right?

22 A. Yes.

23 Q. And if you could please let me finish the
24 question before you begin your answer, I would
25 appreciate it. Thank you.

1 And mechanical failure to the
2 transmission line is caused due to a tree or a branch
3 actually striking the transmission line.

4 A. Yes.

5 Q. So I'd like to talk to you about the
6 level of risk of events like this occurring. You
7 define "risk" as a combination of the likelihood of
8 an adverse event occurring and the consequences of
9 that event, right?

10 A. That's the classical definition, yes.

11 Q. And again, that's your definition.

12 A. No. I'm using the classical definition.
13 It's reflected in ANSI 300 Part 9 and the BMP. So
14 it's my definition in that I'm using it in my
15 testimony, but I did not create it. It's
16 well-established.

17 Q. So you adopt that definition as one that
18 is appropriate for the issues we're discussing in
19 this case.

20 A. Yes.

21 Q. So let's start with air gap flash-across
22 events. You would say that the objective of the
23 utility, with regard to air gap flash-across events,
24 is to make sure that trees do not come close enough
25 to the transmission wire that such an event could

1 occur.

2 A. Yes.

3 Q. And with regard to this possibility,
4 there's actually been testing done to determine
5 appropriate distances for that, right?

6 A. Right.

7 Q. You would say that you relied on NERC
8 standards, that discuss this testing, in forming your
9 conclusions in this case, right?

10 A. Well, I relied on the fact that I
11 conducted the test which is now reflected in the NERC
12 standards, so I suppose so.

13 Q. And what that test revealed, that you
14 just told us you conducted, is minimum vegetation
15 clearance distances, right?

16 A. Yes.

17 Q. These are distances at which vegetation
18 absolutely must be maintained in order to address the
19 risk of an air gap flash-across event, right?

20 A. Infrastructure that's subject to
21 FAC-003.4, yes.

22 Q. Which, to be clear, the infrastructure in
23 this case is not.

24 A. That's correct.

25 Q. But discussing those distances, they do

1 include information for transmission lines of the
2 voltage that is at issue in this case, right?

3 A. That's correct.

4 Q. And you would agree that the minimum
5 vegetation clearance distance, that we're discussing
6 now, can vary slightly based on the elevation above
7 sea level of the transmission line.

8 A. That's correct.

9 Q. And you would agree that in this case,
10 Duke Energy's lines are in the lower end of elevation
11 above sea level, right?

12 A. That's my understanding, yes.

13 Q. Specifically for these 138-kV lines, the
14 minimum vegetation clearance distance, according to
15 the test that you conducted, would be 2.3 feet,
16 right?

17 A. So let me be clear, I want to be
18 completely honest with the proceedings. Anything
19 below 230 was a calculation. The clearances at 230,
20 345, 500, 765 kV were based on empirical data. We
21 did not conduct any test at 138.

22 Q. So that distance was determined by a
23 calculation then.

24 A. Engineering calculations, yes.

25 Q. And you're saying that the distance

1 determined for the 230 line was done by actual
2 experiments?

3 A. Yes, that's correct.

4 Q. That distance is only 4 feet at this
5 elevation, right?

6 A. So? Yeah, okay, it is.

7 Q. So the answer is yes?

8 A. Yes.

9 Q. And so, it would follow that the distance
10 for the 138-kV lines would be less.

11 A. At 2.3 it is.

12 Q. And the calculations that came to that
13 were performed by you.

14 A. No.

15 Q. So you weren't involved in that portion
16 of the study.

17 A. I was part of the team, but those were
18 calculations by a couple of the Ph.D./EEs that were
19 working on the numbers.

20 Q. And you would stand by those calculations
21 as accurate.

22 A. I believe they're accurate and they are
23 adopted now by NERC and FERC.

24 Q. In standards that do not apply to this
25 line.

1 A. That's correct.

2 Q. And in discussing issues caused by
3 physical contact, the risk assessment you would do
4 would be in determining the likelihood that different
5 trees could contact the transmission wires given
6 their various locations, heights, growth rates, et
7 cetera, right?

8 A. Yes.

9 Q. So you would consider each of those
10 issues in determining the likelihood of a given tree
11 contacting the transmission wire.

12 A. Yes.

13 Q. So you would consider where on the
14 property it's located.

15 A. Yes.

16 Q. Specifically with relation to the
17 transmission wire.

18 A. Well, yes.

19 Q. So you'd agree trees that would be closer
20 to the transmission wire would be, in --

21 A. Well --

22 Q. -- many cases, more likely to contact the
23 transmission wire.

24 A. Yes.

25 Q. And again, Mr. Goodfellow, if you could

1 please allow me to finish my question.

2 A. I know. I could guess where you were
3 going, but I'll be good.

4 Q. You would also consider growth rates in
5 determining whether or not a tree is likely to
6 contact the transmission wire.

7 A. On an individual tree basis, that would
8 be a factor.

9 Q. As well as the current height of the
10 tree.

11 A. If I'm concerned about -- yeah, I would
12 say the current height of the tree.

13 Q. And the maximum height of the tree.

14 A. What it could become, yes. What height
15 it could attain.

16 Q. And you'd agree that those issues, growth
17 rates, heights, maximum heights, that those vary from
18 tree to tree.

19 A. Yes.

20 Q. And obviously the location of a tree, of
21 multiple trees on the same property, would vary.

22 A. Yes.

23 Q. And the proximity of those trees to the
24 transmission lines across this line, the lines that
25 are at issue in this case, would vary.

1 A. Yes.

2 Q. And you'd agree, as we said, that each of
3 those factors has some impact on the likelihood of a
4 tree contacting the transmission wire.

5 A. Those are some of the factors, yes.

6 Q. So another key concept of the integrated
7 vegetation management program that you discuss in
8 your testimony is the wire zone/border zone concept,
9 right?

10 A. Yes.

11 Q. This concept provides that trees --
12 there's different maximum heights of trees and
13 vegetation depending on where the tree is in relation
14 to the transmission wire.

15 A. Yes.

16 Q. So generally, in the wire zone, the
17 heights are shorter.

18 A. Yes.

19 Q. And that's where we talked about earlier
20 that Duke does not allow any tree species.

21 A. Yes.

22 Q. And the border zone -- the wire zone, I'm
23 sorry, is defined as it includes the area directly
24 under the transmission lines, right?

25 A. Yes.

1 Q. And it includes some level of area
2 outside of the outermost transmission lines.

3 A. Yes.

4 Q. And that area that's added to the wire
5 zone varies based on the voltage of the line.

6 A. Yes.

7 Q. So in this case, the wire zone for these
8 138-kV lines would be the area under the transmission
9 wire and then extending 20 feet on either side from
10 the outermost transmission wire.

11 A. That's what the specification says, yes.

12 Q. And the border zone would be the
13 remainder of what's left of the 100-foot easement
14 after that wire zone is accounted for.

15 A. Yes.

16 Q. So it would be fair to say, in this area,
17 the border zone would be roughly the 15 feet or so on
18 the far end of either side of the easement.

19 A. Yes.

20 Q. And that might vary a little bit based on
21 the width of the transmission conductor.

22 A. That's right.

23 Q. So in the border zone, trees can -- Duke
24 does allow some trees to exist, right?

25 A. Yes.

1 Q. And those trees, according to Duke, can
2 be trees that mature at a height of 15 feet or less.

3 A. That's correct.

4 Q. So I want to talk a little bit about how
5 those rules might impact whether or not a tree is
6 allowed to stay or a tree has to be removed. So
7 let's say I have a property along these lines, and I
8 have an ornamental tree with a mature height of
9 14 feet that is planted 21 feet from the outermost
10 conductor that is, let's say, 45-feet tall at its
11 lowest point. Are you following?

12 A. Yes.

13 Q. Now, per Duke's assessment and
14 application of the wire zone/border zone concept,
15 that tree would be allowed to remain on my property,
16 right?

17 A. Yes.

18 Q. And that's because it matures at a height
19 of less than 15 feet.

20 A. That's right.

21 Q. And it is in the border zone.

22 A. That's right.

23 Q. And you would agree that this tree would
24 be 21 feet from the outermost conductor.

25 A. Well, that's your hypothetical.

1 Q. In this hypothetical.

2 A. Yes.

3 Q. And 31-feet shorter than the shortest
4 wire, right? If the shortest wire was 45 feet and
5 this is 14 feet.

6 A. If you're thinking about horizontal drop,
7 not a tangent, but yes.

8 Q. Based on geometry, the tangent would
9 actually be a longer distance than the horizontal
10 drop, right?

11 A. That's right.

12 Q. So you would feel comfortable in this
13 case saying there's not a risk of the tree contacting
14 the transmission line.

15 A. A 14-foot tree?

16 Q. Yes.

17 A. Yes, that's true.

18 Q. So it's allowed to stay.

19 A. Yes.

20 Q. So let's change it a little bit and say
21 that there's now that same tree but it matures at a
22 height of 16 feet. Now that tree would be removed,
23 right?

24 A. Yes.

25 Q. Because it's in the border zone and has a

1 height of more than 15 feet at maturity.

2 A. That's right.

3 Q. But you'd agree that tree is still
4 21 feet from the outermost conductor horizontally.

5 A. In your hypothetical. I don't know of
6 any trees that would fit that description of maturing
7 at 16 feet, but yes in your hypothetical.

8 Q. So, in this hypothetical, the tree would
9 be 21 feet from outermost conductor.

10 A. Yes.

11 Q. And it would be 29-feet shorter than the
12 shortest conductor.

13 A. Right.

14 Q. And you would -- are you now saying that
15 the tree would have a risk of contacting the
16 transmission wire?

17 A. No, I'm not saying that.

18 Q. And there also wouldn't be a risk of an
19 air gap flash-across event, would there?

20 A. No.

21 Q. But Duke would remove that tree under its
22 proposed program.

23 A. Yes.

24 Q. So let's do one more. Let's take that
25 original tree and give it a mature height of 10 feet,

1 but this time it's only 19 feet from the outermost
2 conductor. So now it's in the wire zone, right?

3 A. I'm following. Yes.

4 Q. So yes, it would be in the wire zone?
5 Yes?

6 A. I did say yes.

7 Q. And it would be 19 feet from the
8 outermost conductor as I said, right?

9 A. Yes.

10 Q. And 35-feet shorter than the lowest
11 conductor.

12 A. Yes.

13 Q. So you would agree that this tree does
14 not have a risk of contacting the transmission line.

15 A. True.

16 Q. And it doesn't have a risk of coming
17 anywhere near the minimum vegetation clearance
18 distance, does it?

19 A. It does not.

20 Q. It would not grow into close proximity
21 with the wires at all.

22 A. True.

23 Q. But Duke would remove this tree, wouldn't
24 it?

25 A. Yes.

1 Q. And that's only because it's a tree
2 species in the wire zone.

3 A. That is correct.

4 Q. So, Mr. Goodfellow, I'd like to go back
5 for just a moment and talk about the ANSI standards
6 that we talked about earlier. You told us that there
7 are some of those ANSI standards that would apply to
8 Duke in conducting vegetation management, right?

9 A. I did.

10 Q. In your testimony you told us Part 7 and
11 Part 9 would apply, right?

12 A. Yes.

13 Q. You told us today that Part 1 would
14 apply.

15 A. To the extent that we're talking about
16 pruning, yes.

17 Q. So when Duke is pruning, you think it
18 should follow ANSI Standard A300 Part 1.

19 A. Yes.

20 Q. Are there any other ANSI standards that
21 you believe Duke is required to comply with?

22 A. No. With the exception of ANSI Z133
23 which is the safety standard.

24 Q. Okay. So they're required to comply with
25 Z133.

1 A. Yes.

2 Q. And you don't believe there are any other
3 A300 standards that Duke is required to comply with?

4 A. That's how I initially answered the
5 question. In the ten parts to the A300, there are
6 three that would apply: Part 1, 7, and 9.

7 Q. One moment, Mr. Goodfellow.

8 So, Mr. Goodfellow, I apologize. You
9 would believe that Part 2, the soil management
10 standards for ANSI, Duke should not follow those
11 standards?

12 A. Correct.

13 Q. You believe that Duke should not follow
14 the planting and transplanting standards proposed by
15 ANSI? Those would be in Part 6.

16 A. If they were engaged in planting, they
17 should, but generally no, they would have no occasion
18 to.

19 Q. You don't believe that Duke should follow
20 Part 8 which is the root management standards put out
21 by ANSI?

22 A. Not for the -- no, I don't believe so.

23 Q. So to be clear, Mr. Goodfellow, you only
24 believe that Duke should follow Parts 1, 7 and 9 of
25 the ANSI A300 standards.

1 A. Generally that's correct, yes.

2 MR. DRESSEL: That's all I have, Your
3 Honor.

4 EXAMINER SANYAL: Mr. Etter, do you have
5 any additional questions?

6 MR. ETTER: Yes, I have just a few
7 questions. Just a moment, Your Honor.

8 - - -

9 CROSS-EXAMINATION

10 By Mr. Etter:

11 Q. Good afternoon, Mr. Goodfellow.

12 A. Good afternoon.

13 Q. I will try not to cover the same areas
14 that Mr. Dressel did.

15 First of all, if you'll turn to page 8 of
16 your testimony and line 21.

17 A. I'm there.

18 Q. Okay. You state "The border zone is that
19 area beyond the wire zone to the edge of the cleared
20 corridor." Do you see that?

21 A. Yes.

22 Q. And by "corridor" do you mean the
23 right-of-way?

24 A. Yes.

25 Q. Okay. And on page 9, line 15, you use

1 the same word there, "corridor," and that's for
2 right-of-way, correct, or easement?

3 A. No, it might be different than easement.

4 Q. Okay.

5 A. Sometimes the easements are very, very
6 wide so they maintain a corridor less than.

7 Q. So that would be different from the -- is
8 it the same as the right-of-way but maybe different
9 from the easement; is that correct?

10 A. I think that the -- there's a potential
11 for confusion. So the right-of-way often will
12 describe the area that's legally committed by a
13 easement or fee, but the cleared corridor is the area
14 that's being maintained.

15 Q. Okay. Thank you.

16 Back on page 8, lines 4 and 5 --
17 actually, let's go back to line 2. You state, "In
18 contrast, incompatible plants include species that
19 have the potential to grow into close proximity to
20 conductors. By this definition most species of tree
21 are incompatible with overhead transmission lines."
22 Do you mean not all species are incompatible -- not
23 all species of trees are incompatible?

24 A. Yeah, I think we established that there's
25 some few exceptions.

1 Q. Now if you turn to page 11.

2 A. Okay.

3 Q. Lines 17 through 19. You state there
4 that "excessive height reduction pruning may be
5 necessary to achieve adequate clearances at the time
6 of pruning...." You use the term "may be necessary."
7 Does that indicate that the height reduction pruning
8 should be done on a case-by-case basis?

9 A. It should never be done. When it is
10 done, you have to anticipate the tree's growth
11 response. There's an exaggerated growth response
12 following pruning. The harder you push the plants,
13 the more it will push back.

14 The ECI study, that was described by
15 Mr. McLoughlin, shows the tree growth response rates,
16 and when you look at how fast some of the trees
17 respond, that tells you that you have to prune
18 aggressively to maintain adequate clearances over a
19 period of time.

20 Q. But that depends on the type of tree and
21 the type of vegetation that's there, and not
22 necessarily just treating all trees the same; is that
23 correct?

24 A. Well, I think that's an important
25 question. I don't think it's practical to manage a

1 transmission system on an individual-tree basis and
 2 so what you see is the industry establishing these
 3 more holistic standards and references. So, as was
 4 pointed out earlier this morning, those tree growth
 5 response tables included all types of species, some
 6 of them will grow more, some of them will grow less,
 7 but it's not reasonable to expect the millions of
 8 trees, probably hundreds of thousands on a
 9 transmission system, millions of trees on a
 10 distribution system, to be addressed individually; so
 11 it's very common to see a utility establish
 12 references like that for all trees.

13 Q. But by doing that then, some trees could
 14 be harmed by pruning them back -- pruning some trees
 15 back the same as other trees are pruned back.

16 A. Right. Most of the specifications I've
 17 seen with other clients do have a recognition that
 18 ask the person performing the work to give some
 19 consideration to the tree's likely growth response,
 20 but, at the end of the day, there needs to be a
 21 quantitative basis and that's what's reflected in the
 22 ECI report.

23 MR. ETTER: Thank you. That's all the
 24 questions I have.

25 Thank you, Your Honor.

1 EXAMINER SANYAL: Thank you.

2 Mr. McMahon, you may proceed with any
3 redirect you may have.

4 MR. McMAHON: Can we have a few minutes,
5 Your Honor?

6 EXAMINER SANYAL: You may. Let's go off
7 the record.

8 (Recess taken.)

9 EXAMINER SANYAL: Let's go back on the
10 record.

11 Mr. McMahon, you may proceed

12 MR. McMAHON: Thank you, Your Honor.

13 - - -

14 REDIRECT EXAMINATION

15 By Mr. McMahon:

16 Q. Mr. Goodfellow, I just have a few
17 follow-up questions. I don't know if this
18 exhibit will help. Let me just show you what's
19 already marked as Complainants Exhibit 34.

20 There were some questions about whether
21 and why certain of the ten ANSI standards may or may
22 not apply to utility companies. So I've just shown
23 you that exhibit just because on the first page it
24 identifies the ten standards. Can you clarify why,
25 in your opinion, only Parts 1, 7, and 9 of ANSI A300

1 are relevant to utility companies like Duke Energy
2 Ohio?

3 A. Rather than paraphrasing, can we have a
4 copy? I just want to read the title page.

5 Q. Of?

6 A. Any of them.

7 Q. Oh.

8 A. That would work.

9 MR. McMAHON: Your Honor, let the record
10 reflect I'm handing Mr. Goodfellow a copy of the ANSI
11 A300 Part 7 from 2012.

12 MR. DRESSEL: Your Honor, I don't believe
13 this has been marked as an exhibit. Would it be
14 possible to do that, so we could have a copy of what
15 the witness is referring to?

16 EXAMINER SANYAL: Mr. McMahan, I mean, I
17 would prefer, if we were referring to this document,
18 that it be entered.

19 THE WITNESS: I can paraphrase. I was
20 just reluctant to paraphrase, but I can answer the
21 question with --

22 EXAMINER SANYAL: I mean, are you just
23 using it to refresh his memory or --

24 MR. McMAHON: Yes.

25 EXAMINER SANYAL: -- are you using it --

1 MR. McMAHON: I'm sorry, I didn't mean to
2 interrupt, Your Honor.

3 EXAMINER SANYAL: It's okay. Go ahead.

4 MR. McMAHON: We're not looking to
5 introduce that document into the record. It's just
6 so I can refresh his recollection about what its
7 relevance is.

8 EXAMINER SANYAL: Okay. Mr. Dressel,
9 based on that, if he's just using it, glancing over
10 it briefly to refresh his recollection, I'm going to
11 allow him to do that.

12 Go ahead.

13 MR. DRESSEL: Your Honor, in that case,
14 may I just take a look at it?

15 EXAMINER SANYAL: Absolutely.

16 MR. DRESSEL: He just showed it as he
17 walked by.

18 MR. McMAHON: We do have copies.

19 EXAMINER SANYAL: Sure, yeah, that would
20 be great.

21 MR. McMAHON: Let's just go ahead and
22 mark it, please, as Duke Energy Ohio Exhibit 6.

23 (EXHIBIT MARKED FOR IDENTIFICATION.)

24 Q. (BY Mr. McMahon) For the record,
25 Mr. Goodfellow, can you explain what Duke Energy Ohio

1 Exhibit 6 is?

2 A. This one happens to be ANSI A300 Part 7,
3 2012. It's the IVM standard. In answering the
4 question that's before me, I simply wanted to look at
5 the title so that I was correct. So this is
6 "American National Standard for Tree Care Operations
7 - Tree, Shrub, and Other Woody Plant Management -
8 Standard Practices." And then each one of the parts,
9 1 through 10, will go on to a specific topic. But
10 it's a very broadly-worded title and it's a broad set
11 of standards.

12 If one looks at it, now that it's
13 introduced as evidence, you could look at the number
14 of people that participate in this, and typically
15 utilities have a small set of representation --
16 representatives in the ANSI process. And it covers a
17 wide range of things that we would have nothing to do
18 with, you know, nursery industry, lightning
19 protection. Just there's lots of things a utility
20 vegetation management program wouldn't have any use
21 for, that's why.

22 Q. Okay. In response to one of
23 Mr. Dressel's questions, I believe you used the
24 phrase "It's not practical to manage transmission
25 systems on an individual-tree basis." Can you

1 explain what you're referring to in making that
2 comment, please?

3 A. Right. There's just too many trees to
4 have a maintenance prescription written for every one
5 of them. So the standard practice is to establish an
6 approach at a higher level, and what I'm talking
7 about there is a construct of IVM.

8 IVM is a system and it relies on, among
9 other things, the concept of compatible and
10 incompatible plants, and they're defined in terms of
11 the intended use of the site by the asset owner. So,
12 in this case, Duke is the asset owner and has
13 determined what is compatible and incompatible.

14 When you talk about managing on an
15 individual basis, the challenge with a transmission
16 system is the tolerance for failure is so low. In
17 other words, it only takes one tree to bring down a
18 transmission system.

19 Tree contact on a distribution system can
20 occur incidentally, 10 or 20 percent of the trees may
21 have made contact, we have no interruption, no threat
22 to public safety.

23 Transmission systems are exquisitely
24 intolerant and it only takes one tree to take down a
25 system or it may cascade beyond the system. So it's

1 not practical to try to fine-tune your operations to
2 that level of detail. And it's also appropriate to
3 consider the worst-case scenario and be very
4 conservative in what you tolerate in terms of
5 tree-related risks.

6 Q. And when you say "tree-related risks,"
7 what do you mean?

8 A. Basically adverse events initiated by a
9 tree. So we've talked about a fault becoming an
10 interruption and an outage. We haven't really spoken
11 about the risks to the public, but we're talking
12 about a tremendous amount of energy. Also risks
13 could be manifest to people in the tree, working
14 around the tree. We haven't talked about minimum
15 approach distances yet, but when you're managing
16 these systems -- we've spent a lot of time, over the
17 last two days, talking about the clearance between
18 the tree and the conductor, but you've got to add in
19 there all these other factors. So that's the --

20 MR. DRESSEL: Your Honor, at this point
21 we would object to Mr. Goodfellow's discussion of
22 minimum approach distances for people working in the
23 trees as beyond the scope of the direct examination.
24 I believe a portion of Mr. Goodfellow's answer began
25 by responding to an issue that came up on the direct

1 examination but, at this point, we're pretty far
2 afield of what was actually discussed during the --
3 I'm sorry -- during the cross-examination.

4 MR. McMAHON: Your Honor, the redirect is
5 following up on questions by Mr. Dressel regarding,
6 and I believe this is an exact quote, elevated risk
7 to the facilities and to public safety. He asked
8 Mr. Goodfellow about that concept and I'm following
9 up on redirect to get further explanation in that
10 regard.

11 EXAMINER SANYAL: Any follow-up?

12 MR. DRESSEL: Your Honor, we didn't, on
13 the cross-examination, the risk to people being in
14 the trees, trimming, wasn't discussed. This has gone
15 beyond the scope of the cross-examination.

16 EXAMINER SANYAL: I'm going to overrule
17 the objection.

18 Please continue.

19 Q. (By Mr. McMahon) Mr. Goodfellow, what do
20 you mean by minimum approach distance?

21 A. So in the ANSI A300 -- excuse me -- Z133
22 and OSHA 269, 1910.269, there is a table that
23 establishes minimum -- actually there's two tables
24 that establish the minimum distance --

25 MR. DRESSEL: Your Honor, we would object

1 to hearsay to what's contained in the OSHA table;
2 also relevance. The Commission has no jurisdiction
3 over OSHA standards and enforcing OSHA standards. At
4 this point it's not relevant to this proceeding.

5 MR. McMAHON: It's relevant to minimum
6 approach distance which is a highly-relevant issue
7 when it comes to vegetation management along the
8 transmission lines, Your Honor.

9 EXAMINER SANYAL: I don't think we have
10 the documents he's referring to.

11 MR. McMAHON: I haven't heard what it is
12 yet.

13 EXAMINER SANYAL: He's -- I think I
14 definitely heard him refer to a couple of tables
15 contained in documents that we don't have in front of
16 us. If we can have the witness rephrase or provide
17 his expertise in another way, that would be
18 preferable.

19 THE WITNESS: I can do that.

20 So we won't be specific to what those
21 distances are, but there is a minimum approach that a
22 qualified worker can make to the line while it's
23 energized, and a minimum approach a nonqualified
24 electrical worker can make to the line.

25 So when you consider the clearance, not

1 only do you need to consider the clearance as it's
2 lost by the exaggerated growth response of the tree;
3 if you're thinking about actually performing
4 maintenance on the line, you wouldn't want to get to
5 the point where you had to take it out of service to
6 perform maintenance and that, in fact, is what's
7 happened twice on this particular circuit over the
8 summer.

9 So you have to not only -- those
10 distances are greater than the ones we've been
11 talking about, the minimum vegetation clearance
12 distances. They're, in the case of a qualified
13 worker, about twice; in the case of a nonqualified
14 worker, about five or six times. So you have to add
15 that to your minimum clearance you'd achieve at the
16 time that the work was performed, anticipate the
17 growth response of the trees, and anticipate the
18 limitations that workers would have to observe.

19 And frankly, what you end up with is
20 very, very substantial clearance distances at the
21 time of maintenance, to the point where there's not
22 much left of the tree, for trees underneath the
23 conductors.

24 Q. In the context of a transmission
25 conductor.

1 A. Oh, absolutely. Transmission definitely.

2 Q. This might sound silly, what do you mean
3 by qualified and unqualified?

4 A. So qualified workers have gone through
5 training and are essentially certified by their
6 employer as being qualified to perform work on
7 energized facilities. They have to be able to
8 identify the equipment, understand the voltage
9 classes, know appropriate protective equipment, work
10 practices, et cetera, et cetera. So they have more
11 knowledge than the average arborist -- than would be
12 available to the average arborist.

13 Those people that do tree work that don't
14 have that qualification are nonqualified -- not
15 unqualified but nonqualified -- and they have to
16 observe a much greater separation between energized
17 parts and where they're working. And frankly, this
18 is why I was really concerned, yesterday, to hear
19 about the idea that owners may maintain or hire a --

20 MR. DRESSEL: Your Honor, objection.
21 This mischaracterizes Mr. Back's testimony. He never
22 said -- in fact, he repeatedly said that owners
23 should not be in the trees, trimming them. And for
24 the witness to testify that Mr. Back said that
25 property owners should go up in the trees and perform

1 the work themselves is just inaccurate.

2 MR. McMAHON: I don't believe Mr.
3 Goodfellow -- first of all, he didn't even finish his
4 sentence and I don't believe he was going there, but
5 we can clarify that.

6 EXAMINER SANYAL: Mr. Goodfellow, go
7 ahead and finish your response.

8 THE WITNESS: Right. I agree with
9 Complainants' counsel, I would not ever advocate that
10 someone -- and I don't think Mr. Back anticipated
11 that. Although, apparently, Mr. Baker did that very
12 thing this summer.

13 MR. DRESSEL: Objection, Your Honor.

14 THE WITNESS: All right, so I won't say
15 that.

16 MR. DRESSEL: Your Honor, there's been no
17 foundation for this and we move to strike it.

18 EXAMINER SANYAL: I agree. Let's remove
19 any reference to the Complainant, Mr. Baker.

20 THE WITNESS: Okay, okay.

21 So I do, as I mentioned, a fair amount of
22 expert witness work in civil litigation on injuries
23 and I happen to have command of the statistics. And
24 so for qualified electrical tree workers or, in other
25 words, the line clearance contractors, they have AN

1 OSHA MOD factor of .9. So an average is 1 --

2 MR. DRESSEL: Objection, Your Honor.

3 Again, we don't have these OSHA figures in front of
4 us.

5 EXAMINER SANYAL: Agreed.

6 MR. DRESSEL: Move to strike that portion
7 of the testimony.

8 EXAMINER SANYAL: Let's do that.

9 Q. (By Mr. McMahon) Mr. Goodfellow, try to
10 explain the issues you're talking about without
11 referring to specific --

12 A. Data.

13 Q. -- OSHA data.

14 A. So essentially the experience by the
15 TCIA, which is the organization that Plaintiffs' --
16 what was his name -- anyways. The Tree Care Industry
17 Association maintains data and essentially it looks
18 at accidents over time, and I can tell you that the
19 experience of that data -- I don't want to say
20 dataset -- basically the commercial arborists are
21 five times more likely to have problems, safety
22 issues, than the qualified line clearance tree
23 workers. So I would be concerned that they would be
24 asked by a Complainant, a property owner, to do work
25 when that's their safety record.

1 MR. DRESSEL: Objection, Your Honor, to
2 the testimony about commercial versus other arborists
3 performing the work. We haven't heard sufficient
4 foundation for this witness to offer that testimony.

5 And to the extent that he's referring to
6 studies that have been performed by other people that
7 we don't have before us here in court today, those
8 statements would be hearsay as they're out-of-court
9 statements offered for the truth of the matter
10 asserted.

11 And again, we would renew the objection
12 that we're still beyond the scope of what was covered
13 during the cross-examination.

14 MR. McMAHON: We're not looking to
15 introduce any studies into the record that might be
16 hearsay, Your Honor. The witness was trying to
17 answer the question to avoid the data issue. The
18 witness is an expert in this field and can testify
19 about his experience in consulting sources of
20 information to render opinions about safety and
21 issues in vegetation management along transmission
22 lines, and Mr. Dressel asked him about risks and
23 safety issues in that regard.

24 MR. DRESSEL: May I respond briefly, Your
25 Honor?

1 EXAMINER SANYAL: Yes.

2 MR. DRESSEL: The fact that they're not
3 trying to introduce the study doesn't make the
4 hearsay less problematic. It makes it more
5 problematic because not only are they referring to an
6 out-of-court statement and offering it for the truth,
7 they're not providing that full statement to counsel
8 for Complainants and OCC, thus depriving us of the
9 chance to ascertain the credibility of that statement
10 or cross-examine the witness on it. Therefore, this
11 is hearsay and should be stricken.

12 EXAMINER SANYAL: And this is
13 specifically with regard to his statement about
14 commercial arborists --

15 MR. DRESSEL: Correct.

16 EXAMINER SANYAL: -- versus qualified.

17 MR. DRESSEL: Correct. Just that portion
18 of the testimony.

19 EXAMINER SANYAL: Mr. McMahon, do you
20 have a follow-up?

21 MR. McMAHON: Your Honor, the witness, as
22 an expert, is entitled to testify about sources and
23 information that a normal expert on these issues
24 would consider in rendering testimony regarding
25 safety- and risk-associated matters when it comes to

1 vegetation management on transmission lines. And
2 we're not asking him to introduce the study. We're
3 just asking him to testify about his knowledge in
4 this regard, and he will be subject to
5 cross-examination.

6 EXAMINER SANYAL: I'm going to overrule
7 your motion. You will have the opportunity to cross.
8 Let's move on on this issue.

9 Q. (By Mr. McMahon) In talking about the
10 practicability to manage transmission systems on an
11 individual tree-by-tree basis, how does that concept
12 relate, if at all, to IVM?

13 A. Both the IVM standard and BMP are fairly
14 specific and say that pruning of individual trees is
15 generally not practiced on transmission lines. So
16 that would be the high-level statement. Can you
17 repeat the rest of the question?

18 Q. Well, in particular, in response to one
19 of Mr. Dressel's questions, I think you referred to,
20 you might have started off saying millions of trees
21 and then you changed it to hundreds of thousands of
22 trees on a transmission system.

23 A. Right.

24 Q. What are the practical issues associated
25 in trying to do vegetation management on that number

1 of trees?

2 A. Right, right, I understand now, thank
3 you.

4 So one of the things that becomes a
5 problem, when you manage on an individual-tree basis,
6 is you end up with potentially different intervals in
7 which you need to maintain and it's just -- it would
8 mean that every individual tree that had some
9 potential to create risk for the transmission line
10 would have a separate maintenance prescription, and I
11 believe that's impractical.

12 So it's much more common, basically a
13 standard if you will, to have a vegetation management
14 program on a transmission circuit, from substation to
15 substation, so that you would run a segment of line
16 and you have a standard set of specifications that
17 you would then maintain the corridor to and, in this
18 case, it would be based on an integrated vegetation
19 management strategy and it would involve a number of
20 methods to achieve those objectives. So there are,
21 under IVM, a number of control methods if that makes
22 sense.

23 So you're thinking about it as blocks or
24 miles of project as opposed to individual trees. And
25 I think that should be pretty clear, the complexity

1 you introduce when you try to be specific to each
2 tree. I don't know of any utility that does that.

3 Q. And would you recommend that any utility
4 do so?

5 A. I don't think we have the technology and
6 I don't think we could afford that level of intensity
7 because there would be substantial cost with that.

8 Q. What do you mean by that?

9 A. A large portion of the cost of doing tree
10 work is mobilization, getting the crew there, and
11 demobilizing and leaving again. So if you can do
12 multiple trees, in other words spans, you spread
13 those fixed costs over the variable costs and your
14 cost per unit goes down. It's much more cost
15 effective to do it that way.

16 MR. DRESSEL: Objection, Your Honor, and
17 move to strike the discussion of cost. This witness
18 hasn't been established as -- they've not established
19 foundation that this witness is familiar with the
20 costs that go into this, that this witness has
21 reviewed the costs that would be incurred by Duke
22 Energy in conducting vegetation management one way or
23 another in this case.

24 And again, it's beyond the scope of the
25 cross-examination as the cross-examination did not

1 discuss the cost of Duke Energy proposing --
2 performing different types of vegetation management.

3 MR. McMAHON: Your Honor, there was
4 cross-examination regarding integrated vegetation
5 management, and I'm trying to understand the
6 witness's perspective on why IVM is proper and
7 appropriate within the right-of-way of a transmission
8 line, and the witness brought up the concept of cost,
9 and I had a follow-up question to understand the
10 witness's testimony.

11 EXAMINER SANYAL: Overruled. He's been
12 established as a witness in this matter.

13 You may continue.

14 Q. (By Mr. McMahon) Mr. Dressel asked you
15 some questions about the wire zone/border zone issue
16 in the specs implemented by Duke Energy Ohio. How
17 does the concept of the wire zone spec, and the fact
18 that the Company doesn't allow trees of any kind, tie
19 into IVM and the costs that you're talking about?

20 A. So, in fact, I have done a cost study,
21 completed last year, for a research institute in
22 Canada. It was funded by a group of eight or ten
23 utilities including AEP. Duke was not a participant
24 in that. It looked specifically at the costs of IVM
25 versus a non-IVM strategy. It looked at three

1 different case studies. One is after initial
2 establishment, managing a corridor via IVM versus
3 non-IVM. Another one is converting a corridor that's
4 being reclaimed; that's very close to the Duke
5 scenario we're talking about here. And the third one
6 looked at losing the right to use herbicides which
7 means effectively that you can't fully practice IVM.

8 In the case of the one that's most
9 relevant, the -- and the costs I will talk about are
10 over a time period of 20 years. So, often the first
11 cost to convert can be more expensive, but when you
12 bring those costs back into present value over the
13 20-year period, and we did use a discount factor of
14 5 percent, we were able to show that the IVM strategy
15 was about 50 percent the cost of a non-IVM strategy.
16 So, in fact, I have just recently completed a cost
17 study.

18 MR. DRESSEL: Your Honor, may I have the
19 question read back?

20 EXAMINER SANYAL: Sure.

21 (Record read.)

22 MR. DRESSEL: So, Your Honor, we object
23 on two different grounds. The first being that the
24 answer was nonresponsive to the question. The
25 question was related to the wire zone and how that

1 applies to IVM, and the answer was entirely concerned
2 with this witness's cost study that he performed.

3 As to the cost study, we would object to
4 hearsay again as this is a document that's been --
5 that was made outside of -- outside of this
6 proceeding here today. It's a document that we don't
7 have in front of us and, again, a document that we
8 don't have the ability to review. For this witness
9 to refer to portions of that cost study and offer it
10 for the truth of the matter asserted is hearsay.

11 EXAMINER SANYAL: Overruled. I think the
12 witness responded to the question asked because it
13 was about IVM and the cost associated with it, so his
14 answer was responsive. And he wrote the study, he
15 authored the study from what he testified, so he has
16 knowledge about that study.

17 MR. DRESSEL: Your Honor, can we ask that
18 the cost study be provided? This wasn't referenced
19 in the witness's testimony. It wasn't -- this issue
20 never came up in the witness's testimony. It
21 wasn't -- it wasn't ascertained that the witness even
22 was involved in this sort of activity. And for the
23 witness to go into it, without giving us the chance
24 to review that study, is prejudicial.

25 EXAMINER SANYAL: Mr. McMahon.

1 MR. McMAHON: I don't have that document,
2 Your Honor, and I don't know any restrictions about
3 making it a public record.

4 THE WITNESS: It is intellectual
5 property. It's by the CEATI Institute, and I can't
6 tell you what the acronym stands for, but I'll be
7 able to provide that.

8 MR. McMAHON: Okay.

9 THE COURT REPORTER: I'm sorry, what was
10 the institute again?

11 THE WITNESS: C-E-A-T-I. CEATI. Out of
12 Montreal, Quebec.

13 THE COURT REPORTER: Thank you.

14 EXAMINER SANYAL: I think the witness has
15 testified as to his understanding of the costs of IVM
16 versus non-IVM, and I think we will move on from
17 here.

18 MR. DRESSEL: Thank you, Your Honor.

19 (Pause in proceedings.)

20 THE WITNESS: I have my cab lined up.

21 MR. McMAHON: I have nothing further,
22 Your Honor.

23 EXAMINER SANYAL: I assume you have some
24 questions?

25 MR. DRESSEL: Could we just have a

1 moment, Your Honor?

2 EXAMINER SANYAL: Sure.

3 Let's go off the record.

4 (Off the record.)

5 EXAMINER SANYAL: You may proceed with
6 your recross.

7 MR. DRESSEL: So initially may I mark --
8 and approach -- ANSI Standard A300 Part 9 and mark it
9 as Complainants Exhibit 36?

10 EXAMINER SANYAL: So marked.

11 (EXHIBIT MARKED FOR IDENTIFICATION.)

12 MR. DRESSEL: Just for the record,
13 additional copies of this exhibit are forthcoming and
14 will be filed as a late-filed exhibit at a later
15 date.

16 EXAMINER SANYAL: Thank you.

17 MR. DRESSEL: And also, Your Honor, for
18 clarity of the record, we're not able to actually
19 mark this exhibit because this is an original. We'll
20 mark the copy when it's made available.

21 EXAMINER SANYAL: Understood.

22 MR. DRESSEL: May I approach and tender
23 to the court reporter?

24 EXAMINER SANYAL: Yes.

25 MR. DRESSEL: Actually, I'll give it to

1 the witness first.

2 EXAMINER SANYAL: Is there maybe an extra
3 copy just for us for the moment?

4 Mr. Dressel, you can proceed while
5 they're looking for a copy.

6 - - -

7 RECROSS-EXAMINATION

8 By Mr. Dressel:

9 Q. Mr. Goodfellow, you have in front of you
10 what has been marked as Complainants Exhibit 36,
11 right?

12 A. I do.

13 Q. This is ANSI Standard A300 Part 9?

14 A. It is.

15 Q. This is part of the same set of ANSI
16 standards as ANSI Standard A300 Part 7?

17 A. Yes.

18 Q. And ANSI Standard A300 Part 7 was the
19 document that has been marked as Duke Exhibit 6 that
20 you have front of you?

21 A. Yes.

22 Q. And ANSI Standard A300 Part 9 concerns
23 the ANSI standard for tree risk assessments.

24 A. Yes, it does.

25 Q. And this appears to be a fair and

1 accurate copy of ANSI Standard A300 Part 9?

2 A. Yes, it is.

3 Q. Now, on the subject of ANSI standards,
4 you just told us how you don't believe that some ANSI
5 standards apply to utilities performing integrated
6 vegetation management, right?

7 A. Apply to utilities in general.

8 Q. Fair enough. So are you familiar with
9 ANSI Standard A300 Part 2?

10 A. Not off the top of my head.

11 Q. So this is the standard for soil
12 management, modification, fertilization, and
13 drainage?

14 A. I'll take your word for it.

15 Q. Mr. Goodfellow, you have in front of you
16 Complainants Exhibit 34?

17 A. Is that what this is?

18 Q. No, I'm sorry. 34 was provided to you by
19 Mr. McMahon during your --

20 A. Right. I have it right here.

21 Q. -- redirect. So if you could turn to
22 Part 2. It looks like it's about 10 pages in, 10
23 double-sided -- yeah. Let me know when you're there.

24 A. Keep asking. I'll get there.

25 Q. So, Mr. Goodfellow, you'd agree that Duke

1 Energy's transmission infrastructure is located on
2 some properties at issue in this case?

3 A. That the infrastructure is located on a
4 property? Yeah, of course it is.

5 Q. Including Duke's transmission towers?

6 A. Yes.

7 Q. And it would be important that those
8 towers exist on solid ground?

9 A. This has nothing to do with that. This
10 is not a civil engineering standard. I've got 7
11 minutes, buddy.

12 Q. Mr. Goodfellow, respectfully, I've got a
13 few things to cover. If you could just answer the
14 question, we could get you out of here as soon as
15 possible.

16 This standard deals with soil management,
17 right?

18 A. Not in the context of civil construction.

19 Q. But it does deal with how taking care of
20 trees impacts the soil that those trees stand on.

21 A. Not a concern to a utility.

22 Q. It has to do -- as reflected in
23 Exhibit 34, it specifically has to do with soil
24 loosening?

25 A. This is a standard for tree, shrub, and

1 other woody plant care. This has nothing to do --
 2 I'm going to maintain that same line. I do not
 3 believe Part 2 has any bearing on a utility's
 4 vegetation management program; is that clear?

5 Q. So, Mr. Goodfellow, you also agree that
 6 Part 2 has to do with soil management as it relates
 7 to drainage, right?

8 A. In the context of woody plant care, I
 9 suppose so. This is not something, as a practicing
 10 utility forester, you would ever consider, so I'm
 11 going to disagree with you.

12 Q. Mr. Goodfellow, this standard applies to
 13 anyone who -- a standard suggested to apply, I
 14 apologize, to anyone who is engaging in tree removal,
 15 right?

16 A. As you've pointed out, these are
 17 voluntary. I don't know of any utility that would
 18 voluntarily adopt any of the ANSI parts except for 1,
 19 7, and 9. So we can go through these and you're
 20 going to ask me about every one of them and my answer
 21 will be the same: Irrelevant.

22 Q. So, Mr. Goodfellow, it's your testimony
 23 that utilities will choose which ANSI standards they
 24 should adopt and which ones they should not?

25 A. Yes.

1 Q. And you only believe that they should
2 adopt three of the ten standards.

3 A. Yes.

4 Q. Even to the extent that the other
5 standards are implicated by the activities those
6 utilities are engaged in?

7 A. I don't believe they're applicable.

8 Q. You don't believe soil erosion is
9 applicable to --

10 MR. McMAHON: Objection. Asked and
11 answered.

12 MR. DRESSEL: Your Honor, we asked about
13 soil erosion.

14 MR. McMAHON: You've asked three times.

15 EXAMINER SANYAL: Sustained.

16 Q. All right. Mr. Goodfellow, you just told
17 us about a cost study you participated in, right?

18 A. Yes.

19 Q. You told us that this cost study that you
20 were involved in was conducted in conjunction with
21 some utility companies, right?

22 A. It was funded by some utility companies,
23 yes.

24 Q. You mentioned that AEP Ohio was one of
25 those companies.

1 A. That I could remember, yes, definitely.

2 Q. And you said there were about ten such
3 companies who were --

4 A. Funders.

5 Q. -- involved.

6 A. Funders, yes.

7 Q. Again, Mr. Goodfellow, can you please let
8 me finish my question before you answer.

9 A. Okay.

10 Q. Mr. Goodfellow, the study that you
11 participated in, you described as being a proprietary
12 study, right?

13 A. It's currently protected by intellectual
14 property rights, yes.

15 Q. So that study would not be available on
16 the internet.

17 A. I think you can purchase it, but no, it
18 would not be in the public domain.

19 Q. Okay. So it would not be in the public
20 domain where I could go on the internet and find the
21 study that you participated in.

22 A. You could probably find the white paper
23 or the executive summary, but no, you would not find
24 the actual report.

25 Q. Mr. Goodfellow, are you familiar with a

1 discovery request, issued by Complainants in this
2 case to Duke Energy Ohio, entitled CACC-POD-02-002?

3 A. Seriously? No. By that reference? You
4 have to give me a little bit more.

5 Q. So this request requests that Duke
6 produce and attach each and every document reviewed
7 and relied upon by the expert witnesses listed in
8 response to CACC-INT-02-003.

9 A. Is there a question there?

10 Q. Are you familiar with that request?

11 A. No.

12 Q. And are you aware that you were one of
13 the experts who was listed in response to the request
14 that I just referenced?

15 A. Right, I know that, yes.

16 Q. And are you aware that your -- that there
17 were documents related to your testimony that were
18 produced in response to this request?

19 A. I am aware of that, yes.

20 Q. And you're aware that the cost study that
21 you just referenced was not one of those documents?

22 A. That's right.

23 Q. So Complainants have not had the
24 opportunity to review the cost study that you
25 referenced.

1 A. I wouldn't think so.

2 Q. And so, is it fair to say then, that in
3 coming to your opinions in this case, you did not
4 rely on that cost study.

5 A. I wasn't asked to address cost in my
6 prepared testimony.

7 Q. So the --

8 A. So no.

9 Q. So the answer is no, you did not rely on
10 the cost study in preparation for today's case.

11 A. True.

12 Q. And as you just mentioned, you weren't
13 asked to make an opinion with regards to cost, were
14 you?

15 A. No, I was not until asked by counsel.

16 Q. So in offering your testimony in this
17 case, again you did not offer testimony on the impact
18 of costs, that's correct?

19 A. Not in my prepared testimony.

20 Q. So, Mr. Goodfellow, you just --
21 Mr. McMahon asked you about the practicality of
22 conducting tree-by-tree assessments along a
23 transmission line. Do you remember that?

24 A. I do.

25 Q. You testified that it is not practical to

1 assess trees on an individual basis, right?

2 A. For maintenance, that's correct.

3 Q. Mr. Goodfellow, you reviewed Duke
4 Energy's process in implementing its integrated
5 vegetation management in this case, right?

6 A. I reviewed how they practice IVM, yes.

7 Q. So you're aware then that Duke Energy had
8 employees and contractors visit property owners along
9 these transmission lines?

10 A. I am.

11 Q. And that Duke Energy spoke with each of
12 these property owners?

13 A. Yes.

14 Q. And that Duke Energy kept a log of those
15 interactions with property owners?

16 A. Yes.

17 Q. And on that log, Duke Energy even made
18 exceptions for trees that might have been covered by
19 the integrated vegetation management as described in
20 the specifications.

21 MR. McMAHON: Objection, mischaracterizes
22 evidence that's in the record. Mr. Adams expressly
23 testified that the log does not identify exceptions
24 to the Company's specs. The log merely documented
25 communications between the property owner and the

1 people on the ground.

2 MR. DRESSEL: Your Honor, I believe the
3 evidence in the record speaks for itself.

4 EXAMINER SANYAL: I'm going to allow the
5 question. Motion overruled.

6 Q. (By Mr. Dressel) So, Mr. Goodfellow, to
7 answer that question, you're aware that Duke Energy's
8 contractors kept a log that, in some cases, included
9 exceptions or special instructions for special
10 properties?

11 A. I didn't look at that log. I believe
12 that's what they were doing.

13 Q. So would it surprise you to know that the
14 log included specific instructions that the
15 contractors were to follow in performing the
16 vegetation management work associated with the
17 implementation of the IVM program?

18 A. Would it surprise me? No.

19 Q. So it wouldn't surprise you to learn that
20 there were instructions such as grind stumps at the
21 conclusion of that work?

22 A. Right.

23 Q. And you would agree that in order to
24 follow those instructions, the contractors would have
25 to review that log for each property that they

1 visited, right?

2 A. As they converted the site, yes.

3 Q. Now, you're also aware, as we've talked
4 before, of the difference between the wire zone and
5 the border zone?

6 A. Yes.

7 Q. So you'd agree with me when I say that
8 the border zone allows trees that do not mature at a
9 height of more than 15 feet?

10 A. It's now after 4:00. Asked and answered.
11 Would you please try to move along? I will say yes,
12 I agree with you because I already have a couple of
13 times, but I'm going to stand up and walk out of here
14 fairly soon.

15 Q. Mr. Goodfellow, I need you to stay and
16 answer these questions. I'm sorry if it's
17 inconvenient for you, but you were called as a
18 witness, you filed testimony in this case, and
19 Complainants have the right to cross-examine you, and
20 I'm going to proceed with doing that.

21 MR. McMAHON: Your Honor, Counsel does
22 not have the right to ask the same question eight
23 different times.

24 EXAMINER SANYAL: Let's move on and make
25 it expedient.

1 Q. Mr. Goodfellow, in order to make an
2 assessment of whether a tree would mature at a height
3 of more than 15 feet, someone would have to look at
4 that tree, right?

5 A. I suppose so, yes.

6 Q. They'd have to determine the growth rate
7 of that tree?

8 A. No. They'd have to determine the species
9 of that tree.

10 Q. Fair. They'd have to determine the
11 species of the tree.

12 A. That's what I said.

13 Q. And, in doing so, that would allow them
14 to determine the maximum height of that tree.

15 A. They generally wouldn't do that. The
16 people doing that wouldn't even think about that.

17 Q. They wouldn't think about the maximum
18 height of the tree?

19 A. They wouldn't need to. We're talking
20 about two different things. The contractor that
21 actually performs the vegetation maintenance work
22 just knows it's either compatible or not compatible.

23 In this particular case, this is unique,
24 they're converting the site, so of course they're
25 looking at every site, every property, they're

1 building gates, they're doing restoration once.

2 Q. So again, you believe that Duke's
3 implementing vegetation management, and that
4 implementation requires you to determine whether
5 trees in the border zone can or cannot mature at a
6 height of 15 feet, right?

7 A. Duke's already determined that when they
8 established their compatibility list.

9 Q. And you would agree that is a
10 tree-specific determination; yes or no?

11 A. Yes.

12 Q. Mr. Goodfellow, you also talked about
13 minimum approach distances, right?

14 A. I did.

15 Q. You said that minimum approach distances
16 are added to the minimum vegetation clearance
17 distances we discussed on cross-examination.

18 A. They should be.

19 Q. And that that is necessary to ensure not
20 only that a flashover event doesn't occur, but also
21 that the people performing work do not endanger
22 themselves, right?

23 A. True.

24 Q. You talked about how those standards come
25 from OSHA, right?

1 A. Yes.

2 Q. And again, you didn't mention -- or, you
3 didn't rely on any OSHA documents in preparing your
4 testimony, did you?

5 A. This is something that I work with every
6 day, so no. I just know what they say. I don't have
7 to -- it's something I work with all the time.

8 Q. So you didn't include any references to
9 OSHA in your testimony?

10 A. I did not cite any references to OSHA in
11 my testimony.

12 Q. Or any references to minimum approach
13 distances?

14 A. That's correct.

15 Q. And are you familiar with Duke
16 Energy's -- or, with Ohio law that requires utilities
17 to file vegetation management plans with the Public
18 Utilities Commission of Ohio?

19 A. Only to the extent that I've looked at
20 the one that's been at issue in this proceeding.

21 Q. So you reviewed Duke Energy's plan?

22 A. Paragraph (f).

23 Q. And you do -- you would agree --

24 MR. McMAHON: Objection, Your Honor.
25 This is beyond redirect. We didn't address, at all,

1 the filed program that's been approved by the
2 Commission.

3 MR. DRESSEL: Your Honor, may I be heard
4 briefly?

5 EXAMINER SANYAL: I think we gave you
6 significant latitude in redirect, so I'm going to
7 afford Mr. Dressel the same courtesy.

8 Q. (By Mr. Dressel) So you've reviewed this
9 plan?

10 A. I reviewed the changes that were made to
11 paragraph (f).

12 Q. And those changes included minimum
13 clearances distances?

14 A. Not the way I would use that term.

15 Q. Well, those changes included distances at
16 which vegetation had to be maintained at the time
17 clearing was completed?

18 A. Minimum clearance distances have a
19 meaning. They're defined in FAC-003. Although,
20 paragraph (f) does mention 15 feet.

21 Q. So let me try this a different way.

22 Duke Energy, in their plan, did not --
23 you would not say that Duke Energy, in their plan,
24 ignored the safety of the contractors performing the
25 work, right?

1 A. True.

2 Q. So that plan does not provide for any
3 clearances that would jeopardize worker safety,
4 right?

5 A. No, because it says a "minimum of."

6 Q. So isn't it true, then, that Duke's
7 vegetation management plan, on file, establishes a
8 minimum clearance distance of 15 feet between trees
9 and the transmission lines?

10 A. Right. Not less than, right. That's
11 what we mean by "minimum." It doesn't mean "14" or
12 "10." It means "not less than 15." We want to be
13 clear on what "minimum" means.

14 Q. Yeah, and I appreciate that. So at the
15 time clearing is completed, it must be at least
16 15 feet. That might be a better way of saying it.

17 A. Yes, I would agree with that.

18 Q. So you would agree, then, that that
19 15-foot clearance provides for both the minimum
20 vegetation clearance distance that you established
21 through your testing with NERC, and the minimum
22 approach distances, that you discussed on redirect
23 examination, to ensure worker safety.

24 A. That doesn't make sense because that's
25 the distance to be achieved when the work is

1 completed. So yes, when the work is completed, it's
2 compliant. In other words, if you achieve at least
3 15 feet, yes, you've met both the minimum approach
4 distance and the minimum vegetation clearance
5 distance.

6 MR. DRESSEL: Thank you, Mr. Goodfellow.
7 I have no further questions for you.

8 EXAMINER SANYAL: Mr. Etter?

9 MR. ETTER: No questions, Your Honor.

10 MS. WATTS: May he be excused?

11 EXAMINER SANYAL: Yes, he may.

12 Thank you, Mr. Goodfellow.

13 THE WITNESS: You're welcome.

14 EXAMINER SANYAL: Best of luck.

15 THE WITNESS: Yeah, good luck catching my
16 flight.

17 EXAMINER SANYAL: You will catch your
18 flight.

19 THE WITNESS: I hope so. Thank you very
20 much.

21 MR. McMAHON: Your Honor, Duke Energy
22 Ohio moves for the admission of Exhibits 5 and 6.

23 EXAMINER SANYAL: Any objections?

24 MR. DRESSEL: Your Honor, subject to the
25 motions to strike, we have no other objections.

1 EXAMINER SANYAL: Yes, they will be
2 admitted, subject to the motions to strike as to the
3 extent they were granted.

4 (EXHIBITS ADMITTED INTO EVIDENCE.)

5 MR. DRESSEL: We would also --
6 Complainants move the admission of Complainants
7 Exhibit 36.

8 EXAMINER SANYAL: It is so -- any
9 objections?

10 MR. McMAHON: None, Your Honor.

11 EXAMINER SANYAL: It's admitted.

12 (EXHIBIT ADMITTED INTO EVIDENCE.)

13 EXAMINER SANYAL: And I'm noting the fact
14 that it will be filed as a late-filed exhibit. And
15 then I do have the copy that was given to me if you
16 want it back.

17 You don't have a copy, right?

18 THE COURT REPORTER: I do not have a
19 copy, correct.

20 MS. BOJKO: Your Honor, that's why we're
21 filing it, so the court reporter can get a copy.

22 EXAMINER SANYAL: So I do think we have
23 some pending matters to discuss at the moment. So we
24 have rebuttal of Mr. Williams' testimony and then we
25 have yet to admit Mr. Fletcher's direct testimony, so

1 whichever you want to discuss first.

2 MS. BOJKO: I think you meant the
3 supplemental of Mr. Williams.

4 EXAMINER SANYAL: Thank you. It's been a
5 long day. Supplemental for Williams and rebuttal for
6 Mr. Fletcher, so whichever one we want to discuss
7 first.

8 MS. BOJKO: I say let's take the easy one
9 first.

10 EXAMINER SANYAL: We can take the easy
11 one first, which is?

12 MS. BOJKO: Mr. Williams.

13 EXAMINER SANYAL: Okay.

14 MS. BOJKO: I would request that --
15 that's the Complainants' joint witness with OCC. We
16 request that we be able to file the supplemental
17 version of Mr. Williams' testimony as a late-filed
18 exhibit as well, in order to have proper review and
19 to properly redline the document. I guess we can
20 coordinate with counsel, in case counsel has any
21 objections, and then, if there are some, we can maybe
22 address that with the Bench at that time.

23 EXAMINER SANYAL: Sure. If there would
24 be no objections from Duke, do you think we could get
25 that done by Monday or Tuesday?

1 MR. ETTER: Monday's a holiday.

2 MS. WATTS: Your Honor, I thought there
3 originally was representation that Mr. Williams would
4 be able to correct his testimony by Friday.

5 MR. ETTER: Yeah, we are hoping to be
6 able to do it by tomorrow.

7 MS. WATTS: That being the case, it won't
8 take me long to look at it. I don't anticipate it
9 being a problem because obviously the numbers have
10 changed. If that changes his conclusion, that's
11 fine, I don't think that's going to be a problem.

12 MS. BOJKO: I think the representation or
13 the questions earlier was would it solely change the
14 numbers and, after reviewing the testimony, I don't
15 think that's the case. I think there is going to
16 have to be some text that's changed and that was the
17 reason for maybe the difference of Friday versus
18 Tuesday -- I have to work on Monday -- Tuesday.

19 EXAMINER ADDISON: Sorry.

20 EXAMINER SANYAL: Just keep us apprized.

21 MS. WATTS: Okay.

22 EXAMINER SANYAL: Okay. Moving on to
23 Mr. Fletcher.

24 MS. BOJKO: Your Honor --

25 EXAMINER ADDISON: To be fair, I think

1 this is Mr. Dressel's witness.

2 MS. BOJKO: Oh, are we talking about --
3 okay. I mean, he can talk about it, but are we
4 talking about rebuttal in general or just rebuttal?
5 I mean --

6 MS. WATTS: You had objections to parts
7 of his testimony and it's never been admitted.

8 EXAMINER SANYAL: Let's go off the record
9 for a moment.

10 (Discussion off the record.)

11 EXAMINER SANYAL: Let's go back on the
12 record.

13 At this point, we had a brief discussion
14 off the record about rebuttal testimony, so just so
15 we can have it on the record, if counsel for both --
16 if counsel would just put forth their arguments for
17 and against having rebuttal testimony.

18 We'll start with Ms. Bojko.

19 MS. BOJKO: Thank you, Your Honor.

20 As was brought out in the hearing of the
21 case with regard to Mr. Fletcher's testimony, we
22 believe that Mr. Fletcher's testimony about
23 environmental concerns or environmental stewardship
24 of Duke Energy Ohio was precluded by the March 8th,
25 2018, Opinion and Order that the Commission issued

1 regarding Complainants' claims relating to the
2 environmental effects of Duke's vegetation management
3 plan and Duke's clear cutting.

4 Given that Complainants believe that was
5 beyond the scope of this proceeding, Complainants did
6 not put forth testimony regarding Complainants'
7 claims related to the environmental effects of Duke's
8 clear cutting.

9 Given that the Commission applied the
10 Supreme Court of Ohio's test in Allstate Insurance
11 Company versus CEI, 119 Ohio St.3d 301, in issuing
12 its decision the Commission stated that it was not
13 capable of evaluating the environmental impacts of
14 toxic herbicides on local waterways or the
15 environmental impact that soil erosion or the loss of
16 trees may have on streams or waterways or property
17 values when Duke was conducting its vegetation
18 management plan. Because of those issues,
19 Complainants forgone -- forwent the opportunity to
20 file testimony regarding the environmental effects of
21 Duke's clear cutting.

22 And given that the testimony of
23 Mr. Fletcher was allowed to be entered into the
24 record over that objection, Complainants would like
25 the opportunity to consider the option of filing

1 rebuttal testimony.

2 As has been pointed out, Complainants are
3 willing to limit rebuttal testimony to that issue
4 alone and it would be responding to Mr. Fletcher's
5 testimony directly, and we request the option to file
6 that rebuttal testimony, and I suggested not -- I
7 suggested a mere week and two days to make that
8 filing of rebuttal testimony if Complainants deem it
9 necessary.

10 EXAMINER SANYAL: So a couple of points
11 of clarification. We actually have not admitted
12 Duke's Exhibit 1; it's still pending. And then are
13 you proposing November 20th as the filing of any
14 rebuttal?

15 MS. BOJKO: Yes, Your Honor.

16 EXAMINER SANYAL: Ms. Watts.

17 MS. WATTS: Your Honor, first of all, to
18 the point that Complainants allege that they forwent
19 the issue of soil erosion, that issue is replete in
20 the Complainants' testimony that was filed that was
21 admitted into the case, so I don't know how much it
22 was forgone. Additionally, Mr. Back, himself,
23 testified about soil erosion.

24 Notwithstanding the fact that
25 Complainants have that in the record, Mr. Fletcher's

1 testimony was not intended to address any particular
2 Complainant's claim or any claim with respect to soil
3 erosion or any claim with respect to property value
4 or diminution of value of property or damage of
5 property.

6 His discussion about soil erosion is in
7 the context of the Company's overall management of
8 its right-of-way, not in any particular location, but
9 just generally.

10 In addition to that fact, we would be
11 very concerned with adding weeks, one week, two
12 weeks, three weeks to the schedule. We understand
13 the Commission has its own due process that it's
14 entitled to, but any additional delay in the hearing
15 process is going to cause us a great deal of
16 potential cost and concern with respect to the safety
17 and reliability of the current transmission
18 right-of-way as it exists because, as you know, we're
19 not providing any transmission right-of-way
20 vegetation management in that section during the
21 pendency of the case.

22 EXAMINER SANYAL: Ms. Bojko, do you have
23 any other additional --

24 MS. BOJKO: Yes, just to respond.
25 There's a distinction. The Complainants' testimony

1 did not, in fact, talk about the environmental
 2 effects of soil erosion or herbicides or the stream
 3 waste. What the Complainants talked about was the
 4 removal of trees and the result from the removal of
 5 trees. That's completely different than the
 6 environmental effects of herbicides getting into the
 7 streams and the waterways, the environmental effects
 8 of children playing in the yard with herbicides.
 9 Those are the issues the Commission said were beyond
 10 the scope; the environmental effects.

11 The reference to soil erosion created by
 12 the tree removal and how Duke is managing its banks
 13 and slopes, that is a different issue than the
 14 environmental effects. We were talking about the
 15 environmental effects here. In fact, we removed
 16 testimony and witnesses, if you recall, that talked
 17 about property value as well as the environmental
 18 impact and the environmental effects, from our
 19 witness list, even after they had been deposed,
 20 because of the Commission's March 8th ruling. So
 21 there is a definite distinction of environmental
 22 effects versus the testimony that's before you.

23 EXAMINER SANYAL: Mr. Etter, any thoughts
 24 or comments?

25 MR. ETTER: Yes, Your Honor. The

1 testimony by Mr. Fletcher, I think, went beyond just
2 Duke's efforts to -- to comply with regulations. It
3 basically -- by trying to show that Duke was, you
4 know, was trying to tout the environmental efforts
5 that Duke takes regarding its transmission
6 right-of-ways, it seems to indicate some sort of
7 benefit that comes out of those efforts, and so that
8 could be prejudicial to the Complainants.

9 EXAMINER SANYAL: Ms. Watts, did you have
10 any --

11 MS. WATTS: I just had one additional
12 thought.

13 EXAMINER SANYAL: Go ahead.

14 MS. WATTS: Mr. Fletcher's testimony was
15 intended to explain an additional facet of integrated
16 vegetation management which has been a major topic
17 throughout the Company's testimony and is, indeed,
18 kind of the holistic approach to the transmission
19 right-of-way that the Company applies. So his
20 testimony was only one facet of that overall approach
21 and isn't intended to raise issues of environmental
22 compliance or soil erosion or anything of the like.
23 It was merely to explain the additional elements he
24 provides with respect to integrated vegetation
25 management.

1 EXAMINER SANYAL: Ms. Watts, I understand
 2 your desire to move this along as expediently as
 3 possible and not wanting to add a week and two days
 4 to the schedule, but I also understand Ms. Bojko's
 5 arguments that, you know, Mr. Fletcher's testimony
 6 could be taken out of context and that Complainants
 7 did not have an opportunity to present certain
 8 evidence. So I will allow rebuttal testimony for the
 9 limited purpose of rebutting Mr. Fletcher's testimony
 10 with regard to the environmentally-appropriate IVM
 11 practices that he mentions in his testimony.

12 MS. WATTS: May I be heard?

13 EXAMINER SANYAL: Yes.

14 MS. WATTS: Your Honor, just to be clear,
 15 so any rebuttal testimony would not be testimony that
 16 would be designed to address particular claims of
 17 erosion or environmental incorrect -- alleged
 18 environmentally-incorrect actions on an individual
 19 Complainant's property?

20 EXAMINER SANYAL: I think I would -- I
 21 would leave that up to Ms. Bojko, depending on how
 22 she wants to present that evidence. I'm not going to
 23 tell her what she can put in her rebuttal testimony.
 24 I'm going to let her make that --

25 MS. WATTS: So are we varying, then, from

1 the prior Order?

2 EXAMINER SANYAL: The Commission will
3 still not be able to deduce damages when it comes to
4 soil erosion. But to rebut the testimony
5 Mr. Fletcher has provided about environmentally-sound
6 practices, to the extent that Ms. Bojko feels that
7 it's prejudicial to Complainants, she will be able to
8 provide additional evidence. But the Commission,
9 again, cannot act beyond the scope of its authority.
10 I think we're all on the same page on that.

11 MS. WATTS: Thank you.

12 Would it be appropriate to talk about
13 timing?

14 EXAMINER SANYAL: Yes, it would be
15 appropriate. So I think Ms. Bojko mentioned that she
16 would need until Tuesday to figure out if her client
17 was still -- clients were even on board because there
18 might be -- it might be the fact that her clients do
19 not wish to pursue this. So she will let us know
20 by -- could you let us know by Tuesday by noon,
21 perhaps, or would you like end of business?

22 MS. BOJKO: Your Honor, I would like end
23 of business only because I have to set up conference
24 calls at applicable times. It's already 5:00 almost.
25 If I do that tomorrow, then that would likely occur

1 on Monday or Tuesday morning. I have to work with
2 people's schedules. Given that it's a holiday,
3 people might not be available on Monday, so I might
4 have to do it Tuesday morning.

5 EXAMINER SANYAL: I would encourage you,
6 if you can have the call during the weekend that
7 would be great, and let us know before Tuesday if
8 possible because then, from when you give us notice,
9 we'll give you a week --

10 MS. BOJKO: I understand.

11 EXAMINER SANYAL: -- to file any rebuttal
12 testimony.

13 MS. BOJKO: I understand. I'll endeavor
14 to do my best.

15 MS. WATTS: Then, Your Honor, once the
16 testimony is filed, there would then need to be a
17 hearing after that.

18 EXAMINER ADDISON: Which we can address.

19 EXAMINER SANYAL: Which we can address
20 once it's filed. We can organize a conference call
21 or do it via e-mail at that point.

22 MS. WATTS: To talk about timing?

23 EXAMINER SANYAL: Correct.

24 MS. WATTS: So then we would again move
25 for admission of Duke Energy Exhibit 1.

1 EXAMINER SANYAL: At this point now?

2 MS. WATTS: Yes.

3 EXAMINER SANYAL: Yes. And I -- are
4 there any objections to me admitting this exhibit?

5 MS. BOJKO: Just subject to our motions,
6 Your Honor, motions to strike.

7 EXAMINER SANYAL: Thank you.

8 So it shall be admitted, subject to the
9 motions to strike.

10 (EXHIBIT ADMITTED INTO EVIDENCE.)

11 EXAMINER ADDISON: Can we go off the
12 record for a moment?

13 (Discussion off the record.)

14 EXAMINER ADDISON: Let's go back on the
15 record.

16 Ms. Bojko.

17 MS. BOJKO: Your Honor, at this time, I
18 move the admission of Ohio Consumers' Counsel and
19 Complainants Joint Exhibit 1, subject to a late-filed
20 exhibit of supplemental testimony that we will be
21 filing.

22 EXAMINER ADDISON: Thank you, Ms. Bojko.
23 Any objection, Ms. Watts?

24 MS. WATTS: Your Honor, subject to the
25 opportunity to cross-examine the witness on

1 supplemental testimony, I have no objection.

2 EXAMINER ADDISON: Of course, thank you.

3 It will be admitted with those
4 clarifications noted on the record.

5 (EXHIBIT ADMITTED INTO EVIDENCE.)

6 EXAMINER ADDISON: Anything else to
7 discuss before we go off the record? Nothing?

8 MR. ETTER: Your Honor, do you want to
9 discuss the briefing schedule now or do you want to
10 wait until after rebuttal?

11 EXAMINER ADDISON: Well, I think that
12 might be a more appropriate conversation to have once
13 we are provided notification if Complainants are, in
14 fact, going to be filing rebuttal. We can reserve
15 that conversation for a later day. Thank you,
16 Mr. Etter. Do you want to get started writing?

17 (Laughter all around.)

18 EXAMINER ADDISON: So if there's nothing
19 else to discuss today, we are adjourned.

20 (Thereupon, the proceedings concluded at
21 4:35 p.m.)

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CERTIFICATE

I do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me in this matter on Thursday, November 8, 2018, and carefully compared with my original stenographic notes.

Carolyn M. Burke
Carolyn M. Burke, Registered
Professional Reporter, and
Notary Public in and for the
State of Ohio.

My commission expires July 17, 2023.

- - -



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Summary: Transcript Citizens Against Clear Cutting, et al. vs. Duke Energy Ohio, Inc. - Volume III, hearing held on November 8th, 2018. electronically filed by Mr. Ken Spencer on behalf of Armstrong & Okey, Inc. and Burke, Carolyn