

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

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In the Matter of the :  
Application of Ohio Power :  
Company to Initiate Phase 2:  
of Its gridSMART Project : Case No. 13-1939-EL-RDR  
and to Establish the :  
gridSMART Phase 2 Rider. :

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PROCEEDINGS

Before Dick Bulgrin, Attorney Examiner, at the Public  
Utilities Commission of Ohio, 180 East Broad Street,  
Room 11C, Columbus, Ohio, called at 1:30 p.m. on  
Monday, August 15th, 2016.

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Volume IV

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Monday Morning Session,  
August 15th, 2016.

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ATTORNEY EXAMINER: Let's go back on the record. Good afternoon. This is day four of the hearing in the application of Ohio Power Company to initiate Phase 2 of its gridSMART project, and to establish the gridSMART Phase 2 Rider, Case No. 13-1939-EL-RDR. And I believe we have one witness.

MR. MC KENZIE: Yes, your Honor. AEP calls Scott Osterholt for rebuttal testimony.

ATTORNEY EXAMINER: And I'll remind you you are still under oath.

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

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DIRECT EXAMINATION

By Mr. McKenzie:

Q. Mr. Osterholt, could you give your full name and business address for the record, please?

A. Yes. My name is Scott Osterholt, and my business address is 850 Tech Center Drive, Gahanna, Ohio 43230.

Q. By whom are you employed and what is

1 your position?

2 A. I am employed by AEP Ohio. My position  
3 is Director of Risk and Project Management.

4 Q. Did you previously furnish direct  
5 testimony in this case?

6 A. I have.

7 Q. And you have prepared rebuttal testimony  
8 that's been prefiled in this case, correct?

9 A. That is correct.

10 MR. MC KENZIE: Your Honor, we'd like to  
11 mark Mr. Osterholt's prefiled rebuttal testimony as  
12 AEP Ohio Exhibit 13, please.

13 ATTORNEY EXAMINER: It will be so  
14 marked.

15 (EXHIBIT MARKED FOR IDENTIFICATION.)

16 MR. MC KENZIE: May I approach?

17 ATTORNEY EXAMINER: Sure.

18 By Mr. McKenzie:

19 Q. Mr. Osterholt, was this rebuttal  
20 testimony, AEP Ohio Exhibit 13, prepared by you or at  
21 your direction?

22 A. Yes, it was.

23 Q. Do you have any changes or corrections  
24 you'd like to make to your rebuttal testimony?

25 A. Yes, I have one change that needs

1 reflected in two locations. On Page 2, in Table 1,  
2 under "Exclusions" on the left side of the chart,  
3 actually the year, close to the bottom you'll see  
4 there's two 2013 years. It should be -- the second  
5 one should be 2014. And on the Exhibit SSO-R1, the  
6 same change.

7 Q. Thank you. Subject to those changes, if  
8 I were to ask you the same questions that are in your  
9 prefiled rebuttal testimony today, would your answers  
10 be the same?

11 A. Yes, they would.

12 MR. MC KENZIE: Your Honor, we move the  
13 admission of AEP Ohio Exhibit 13, and tender the  
14 witness for cross-examination.

15 ATTORNEY EXAMINER: All right.

16 MS. GLOVER: No questions.

17 ATTORNEY EXAMINER: Ms. Bojko?

18 MS. BOJKO: Thank you, your Honor.

19 - - -

20 CROSS-EXAMINATION

21 By Ms. Bojko:

22 Q. Good afternoon, Mr. Osterholt.

23 A. Good afternoon.

24 Q. Last time we spoke you stated that you  
25 have a Bachelor's Degree in business administration;

1 is that correct?

2 A. I do.

3 Q. And no further degrees; is that  
4 accurate?

5 A. That is correct.

6 Q. And you are not an electrical engineer;  
7 is that correct?

8 A. I am not.

9 Q. Have you had any formal training in  
10 electrical engineering?

11 A. Yes, I started my initial degree in  
12 electrical engineering.

13 Q. And then switched to business  
14 administration?

15 A. That's correct.

16 Q. Nothing beyond beginning years of  
17 undergrad?

18 A. I also had -- you know, I basically  
19 functioned as a -- in the engineering groups,  
20 including engineering supervision, through my career,  
21 so I probably had some either company-wide or  
22 informal training, but nothing as I think you're  
23 suggesting.

24 Q. And have you had any formal training in  
25 the development of electric distribution systems?



1           A.   No.

2           Q.   And have you had any formal training in  
3   designing electric distribution systems?

4           A.   Again, I think the on-the-job training,  
5   I performed in that capacity at some point in my  
6   career.

7           Q.   But no formal training?

8           A.   Correct.

9           Q.   Have you had any formal training in the  
10   design of Supervisory Control and Data Acquisition,  
11   also known as SCDA, system design?

12          A.   Nothing formal.

13          Q.   Have you had any formal training in  
14   software design and development?

15          A.   Nothing formal.

16          Q.   How about any formal training with  
17   Distribution Automation Circuit Reconfiguration  
18   technologies?

19          A.   Nothing formal. I've been responsible  
20   for overseeing that program, but never went through  
21   any specific formalized training.

22          Q.   And we discussed last week that Phase  
23   1 -- I think it was last week, maybe two weeks ago --  
24   Phase 1 of gridSMART deployed Distribution Automation  
25   Circuit Reconfiguration, or DACR, on 70 circuits; is

1 that correct?

2 A. That's correct.

3 Q. And in your role as Manager, Advanced  
4 Distribution Infrastructure, were you responsible for  
5 designing the DACR technologies that were installed  
6 on the 70 circuits that were part of the AEP Ohio  
7 gridSMART Phase 1?

8 A. I was responsible for overseeing the  
9 design, but not doing the design.

10 Q. Do you know -- in that capacity, do you  
11 know what were the design goals for the percentage of  
12 time that the DACR would operate successfully?

13 THE WITNESS: Could you read that back?

14 (Question read back.)

15 THE WITNESS: I don't think we had a  
16 predetermined expectation. GridSMART Phase 1 was a  
17 learning experience where we learned some of the  
18 capabilities, so I think that was more an outcome of  
19 our learning than a predefined input. I think we  
20 were looking to maximize that.

21 By Ms. Bojko:

22 Q. So would the answer be no, there were no  
23 design goals with regard to the operation of DACR?

24 A. I don't think I would say that. I think  
25 we had design goals to maximize that, but we didn't

1 try to assign a numeric number to go with it.

2 Q. In your role as Manager, Advanced  
3 Distribution Infrastructure, were you responsible for  
4 actually installing the DACR technologies that were  
5 part of the circuits in Phase 1?

6 A. No, I was not responsible for physical  
7 installation, I just oversaw that, those efforts.

8 Q. And I'm sorry, were you finished?

9 The Stipulation in this case provides  
10 for the deployment of DACR on 250 circuits; is that  
11 correct?

12 A. That's correct.

13 Q. And as the Director of Distribution Risk  
14 and Project Management, are you now responsible for  
15 designing the integration of DACR technologies on the  
16 additional 250 circuits that are included in the  
17 Stipulation?

18 A. Again, I'm not responsible for doing  
19 that work. My responsibility is to oversee that  
20 work.

21 Q. With those responses, would it be fair  
22 to say that your 25 years' experience in the electric  
23 utility industry has involved management of people  
24 and programs, and overseeing those projects, as  
25 opposed to actually engineering of the AEP Ohio or

1 any other distribution system?

2 A. Yes, there is more time spent on  
3 management and oversight of people and processes than  
4 actual engineering.

5 But I did function in the engineering  
6 capacity from 1990 to approximately 1996 or '97, when  
7 I moved into supervision of management.

8 Q. And part of that was when you were a  
9 student; is that correct?

10 A. Part of the time I was a student,  
11 correct.

12 Q. Let's turn to Page 2 of your testimony.  
13 Page 2, Line -- you do have your testimony in front  
14 of you?

15 A. I do.

16 Q. Line 7, Page 2. Here you discuss the  
17 substantial reliability improvements that were made  
18 on the Phase 1 DACR circuits. Do you see that?

19 A. I do.

20 Q. What reliability improvement was  
21 designed into the 70 circuits equipped with DACR, if  
22 you know?

23 A. I don't think I understand that  
24 question.

25 Q. Do you know if there was an actual

1 reliability improvement designed into the circuits?

2 MR. MC KENZIE: Your Honor, I'll just  
3 object. I also don't understand that question. I  
4 think it's vague.

5 ATTORNEY EXAMINER: Sustained.

6 By Ms. Bojko:

7 Q. Do you know if there was a specific  
8 reliability improvement being targeted in the design  
9 of the 70 circuits?

10 A. Not that I recall. As I said earlier, I  
11 think we were looking to maximize the benefit, and  
12 learn what DACR could achieve.

13 Q. Do you know when the Phase 1 70 DACR  
14 circuits were determined to be operational?

15 A. Each circuit of DACR became optional  
16 after it went through a series of testing, and each  
17 one of those circuits went into effect at a different  
18 time. But, generally, all those circuits were  
19 completed near the end of 2011, if I recall  
20 correctly.

21 Q. I'm sorry. Did you say at the end of  
22 2011?

23 A. Sorry. At the end of 2010, starting in  
24 the year of -- starting in operation early in 2011.

25 Q. So the testing had been completed

1 in 2010, and they were deemed operational in early  
2 2011?

3 A. I think that is the general case, yes.

4 Q. For all -- would that be the general  
5 case for all 70 circuits?

6 A. I think that is correct, yes.

7 Q. Do you know -- so since 2011 -- for each  
8 year since 2011 that a DACR was installed, do you  
9 know how many times they operated correctly?

10 A. That is information we generally have  
11 available, but I don't have that information at the  
12 top -- where I can provide it today.

13 Q. Would your answer be the same with  
14 regard to for each year since 2011, how many times  
15 the DACRs that were installed failed to operate  
16 correctly?

17 A. That would be the same answer. We do  
18 have that data, but I don't have that data available  
19 today.

20 Q. If a DACR operated successfully 75  
21 percent of the time, would you consider that to be a  
22 substantial improvement in reliability, or would you  
23 consider it a failure of 25 percent of the time, in  
24 your opinion?

25 A. So the Stipulation lays out a framework

1 where the secondary metrics looks at the system  
2 performance, and through that Stipulation it's deemed  
3 that 80 percent is the number. If it reaches 80  
4 percent, it is deemed successful.

5 Q. So in your mind, if a DACR operated  
6 successfully 80 percent of the time, that would be  
7 considered an improvement in reliability; is that  
8 correct?

9 A. So you're looking at two different  
10 things. So a DACR system to improve the reliability  
11 needs to reduce the customer minutes of interruption.  
12 To do that -- generally, it has to be functioning  
13 correctly to do that. So it's two different ways of  
14 looking at it.

15 Q. So they are not necessarily correlated;  
16 is that fair?

17 A. They are somewhat correlated, but  
18 they -- not in all cases would they be completely  
19 aligned.

20 Q. And, sir, do you believe that customers  
21 should be required to pay for technology that's  
22 supposed to improve reliability when it does not  
23 operate successfully?

24 MR. MC KENZIE: Objection to the extent  
25 it calls for a legal conclusion. It's also

1 argumentative.

2 ATTORNEY EXAMINER: Sustained.

3 MS. BOJKO: I wasn't asking for a legal  
4 opinion. I asked under his perspective, if he  
5 believes that customers should still be required to  
6 pay for the technology even if -- or even when it  
7 doesn't operate successfully.

8 MR. MC KENZIE: I restate my objection.

9 ATTORNEY EXAMINER: Sustained.

10 By Ms. Bojko:

11 Q. Is it the Company's intention to still  
12 charge customers for DACR technology even if the DACR  
13 equipment fails?

14 A. Yes. But there's also a provision  
15 that -- in the Stipulation where we work to ensure  
16 that the customers achieve that benefit by ensuring  
17 that SAIFI is improved, and as a secondary metric,  
18 if -- if that fails, then the system works  
19 successfully.

20 Q. And you're referring to the tier-to-tier  
21 process that we talked about a couple weeks ago where  
22 if the first metric fails and the second metric  
23 fails, there's some negotiation among the parties,  
24 and then the Commission would have to decide? Is  
25 that the provision of the stip you're referring to?



1           A. Yes, I am referring to the Stipulation,  
2     Section 2, correct, on Page 6.

3           Q. I'm sorry. I didn't hear your section  
4     number.

5           A. Section 2, Page 6 of the Stipulation.

6           Q. And this is the part that if neither  
7     measure is met -- sorry, this is -- this is a little  
8     different than what I had remembered -- recalled.

9           This is the part that if the measure --  
10    if neither measure is met, the Company has to submit  
11    a report to Staff; is that correct?

12          A. That is the first step in that  
13    provision, correct.

14          Q. And then the Commission can determine if  
15    there's a violation of the Stipulation, or if there's  
16    not; is that correct?

17          A. That is correct. That's what the  
18    Stipulation lays out.

19          Q. And other than the Commission  
20    determining that there would be a violation of the  
21    Stipulation, there's no automatic penalty provision  
22    in Section 2, Page 6; is that correct?

23          A. That is correct. That is not -- nothing  
24    else is established by this section. I'm not  
25    covering legal boilerplate outside of my section, but

1 I think there isn't any here in No. 2.

2 Q. Let's turn to Table 1 of your testimony.

3 And that's on Page 2. Are you there?

4 A. I am.

5 Q. Just want to see if I understand the  
6 table correctly. And I think you answered one of my  
7 questions this morning.

8 But Table 1, you show that there's 1.86,  
9 or almost 1.9 million, customer minutes interrupted,  
10 CMI, or customer minutes interrupted were avoided in  
11 2012 as a result of the DACR; is that correct?

12 MR. MC KENZIE: I'm sorry, could I just  
13 have a clarification where we are in the table?

14 MS. BOJKO: Well, that was a horribly  
15 drafted question. Let me try again.

16 By Ms. Bojko:

17 Q. Well, in the table there's years on the  
18 side, right? So let's focus on 2012.

19 MR. MC KENZIE: There's two 2012s, was  
20 my clarification, with and without exclusions.

21 By Ms. Bojko:

22 Q. With no exclusions. On the table it  
23 states that there's approximately 1.9 million  
24 customer minutes interrupted avoided in 2012 with no  
25 exclusions as a result of DACR; is that correct?

1 THE WITNESS: Could I have that one  
2 again?

3 (Question read back.)

4 THE WITNESS: Yeah, that is correct. I  
5 just needed clarification of CMI or CI.

6 By Ms. Bojko:

7 Q. Do you know whether all 70 of the DACR  
8 circuits were operational in 2012?

9 A. Yes, in 2012 all the circuits were put  
10 in service.

11 Q. And do you know how many CMI minutes --  
12 do you know what I mean by "CMI"? Customer minutes  
13 interrupted?

14 Do you know how many CMI minutes were  
15 not avoided in 2012 because a DACR did not work  
16 properly?

17 THE WITNESS: Can I have you read that?

18 (Question read back.)

19 MR. MC KENZIE: I'll just object to the  
20 extent that it presumes this concept of DACR not  
21 working properly that we haven't established, so I  
22 don't see how the witness can answer that question.

23 ATTORNEY EXAMINER: Overruled. You can  
24 answer.

25 THE WITNESS: I don't have that data

1 today.

2 By Ms. Bojko:

3 Q. You do agree with me that DACRs can work  
4 properly, or they can fail; is that true?

5 A. That is correct.

6 Q. Okay. And if we go to 2013, right below  
7 that, for no exclusions, it appears that 2.6 million  
8 CMI, customer minutes interrupted, were avoided in  
9 2013; is that correct?

10 A. That is correct.

11 Q. And at that time you believe all 70  
12 circuits were in operation still; is that correct?

13 A. That is correct.

14 Q. And you also couldn't tell me for 2013  
15 if you knew how many CMI minutes were not avoided  
16 because a DACR did not work properly?

17 A. I do not have that data with me today.

18 Q. And your answers would be the same for  
19 2014 and '15; is that correct?

20 A. That is correct.

21 Q. And you also believe that the 70  
22 circuits were still in operation in '14 and '15; is  
23 that right?

24 A. That is correct.

25 Q. And for 2015 -- again, I'm just talking

1 about the no exclusions at the bottom of the table.  
 2 For 2015, the table shows a DACR CMI savings of 1.5  
 3 million, is that correct; customer minutes avoided,  
 4 interruption -- customer minutes interruption  
 5 avoided?

6 A. Yeah, rounded to the nearest half  
 7 million, yes.

8 Q. And in that table the DACR impact -- in  
 9 the DACR impact table, the SAIFI is reflected as  
 10 negative 9.7 percent; is that correct?

11 A. That is correct. Negative 9.7 percent  
 12 SAIFI means that the SAIFI on those circuits improved  
 13 by 9.7 percent.

14 Q. And that's as an aggregate for the  
 15 circuits that have DACR; is that correct?

16 A. That's correct.

17 Q. And the CAIDI on the table shows 3.4  
 18 percent in the DACR impact column; is that correct?

19 A. That is correct.

20 Q. And does that mean that CAIDI was worse  
 21 as a result of the DACR technology?

22 A. Yes. And that's what we expect. So  
 23 when a DACR circuit reconfigures, there's a Part I  
 24 and a Part II. So Part I circuit goes out, let's say  
 25 in this example it's 2,500 customers.

1           Prior to DACR we would send a line crew  
2 out. The line crew would find that issue and  
3 manually reconfigure the circuit to reenergize as  
4 many customers as possible.

5           In the post DACR world that step is  
6 automatic, so those customers are eliminated. So  
7 CAIDI is the average outage duration for those  
8 customers that have been outaged.

9           So before we had these 2,500 customers  
10 that were quickly put back in service, and then you  
11 have this longer repair time to fix the pole or  
12 whatever needs replaced.

13           So in the post deployment -- or post  
14 DACR world you're only averaging those customers that  
15 have a longer outage time. That's why, you know,  
16 generally, we expect that that CAIDI number would go  
17 up.

18           So it shows that there's -- the  
19 customers are getting the benefit, it's just kind of  
20 one of those things where numerically that's the way  
21 it works out.

22           Q. So with that explanation, would you  
23 expect that CAIDI, for the aggregate DACR circuits,  
24 would be worse for each year that a DACR technology  
25 is installed on the 70 circuits?

1           A. I agree that it would be worse. I'm not  
2           implying that it means that it would be worse for the  
3           customers, there's actually a benefit for the  
4           customers.

5           Q. No, I'm talking about CAIDI would be  
6           worse.

7           A. But still, it's still a benefit, because  
8           again, we have eliminated this large pool of outages.  
9           So now the average of those customers that had an  
10          outage, you know, will go up because of the way it  
11          works.

12          Q. I understand your explanation. Did you  
13          say yes -- I'm just focusing on the CAIDI now. That  
14          would be worse?

15                 ATTORNEY EXAMINER: Sustained.

16                 MS. BOJKO: Did he actually say yes?  
17          Okay. I didn't hear.

18          By Ms. Bojko:

19                 Q. Now, let's look at the bottom of Page 3  
20          of your testimony, Line 14. Here you state,  
21          "...although SAIFI on the aggregate Phase 1 DACR  
22          circuits increased in 2014 and '15..." Do you see  
23          that?

24                 A. I do.

25                 Q. Does that mean that SAIFI performance

1 for 2014 and '15 declined from 2013?

2 A. In the more traditional way of looking  
3 at reliability, yes, those numbers do paint an  
4 unfavorable picture.

5 But it's my position that when you look  
6 at DACR and try to decide does DACR help the  
7 customers, looking at it on a very small view, so one  
8 year to another, or looking at the small pool of  
9 customers, 70 of our 1,500 or 1,600 circuits, is  
10 probably not the most appropriate way to look at  
11 that.

12 If you're looking at the benefit DACR  
13 derived, you should be really looking at -- you're  
14 looking at the circuits' performance with and without  
15 DACR.

16 MS. BOJKO: Okay. Your Honor, I move to  
17 strike everything after the words but in my opinion.  
18 I didn't ask him the effect on customers, I asked if  
19 that statement meant SAIFI performance declined.

20 ATTORNEY EXAMINER: I'm going to deny.  
21 He has a right to clarify.

22 By Ms. Bojko:

23 Q. So you would agree with me, given that  
24 you stated that that SAIFI clause means that SAIFI  
25 performance declined in 2014, '15, that the table



1 that was actually contained in Lanzalotta's testimony  
2 is consistent with your understanding of SAIFI  
3 performance in 2014 and '15?

4 THE WITNESS: Could you read that?

5 (Question read back.)

6 THE WITNESS: Yes, from a traditional  
7 viewpoint, as SAIFI numbers go up, that means the  
8 reliability is -- is lower. But again, I think that  
9 if we're talking about is DACR effective, that is not  
10 the most prudent view of it.

11 By Ms. Bojko:

12 Q. I'm just trying to understand.

13 MR. MC KENZIE: Your Honor, he was not  
14 done with his answer.

15 MS. BOJKO: I thought he was.

16 ATTORNEY EXAMINER: Let's let him  
17 finish.

18 THE WITNESS: Remind me where I left  
19 off.

20 (Answer read back.)

21 THE WITNESS: I can't recall what I was  
22 going to say after that.

23 By Ms. Bojko:

24 Q. But you're not taking issue with the  
25 actual table that reproduced the SAIFI performance

1 numbers in Mr. Lanzalotta's testimony, are you?

2 A. No, I'm not -- I don't have any concerns  
3 with the way he presents his data. I have a concern  
4 with how that data is used to determine whether DACR  
5 is effective or not.

6 Q. Okay. And for your Tables 1 and 2, when  
7 you say the impact without DACR installed, and an  
8 impact with DACR installed, you're referring to the  
9 exact same circuit assuming that the DACR technology  
10 is on it or assuming that the DACR technology is not;  
11 is that correct?

12 A. That is correct.

13 Q. And that also has embedded in it an  
14 assumption that you're comparing how a particular  
15 circuit operates during an event with and without  
16 DACR technology?

17 A. Correct.

18 Q. And you have to then, in that  
19 comparison, assume that the same event, same weather  
20 event, the same squirrel event, the same event would  
21 have to happen to that circuit, that one circuit, on  
22 the same day at the same time; is that correct?

23 A. That's exactly what we're looking at.

24 Q. And for your analysis you're assuming  
25 that the DACR worked properly; is that correct?

1           A. No. So the way it works is when an  
2 event happens that the DACR has an opportunity to  
3 reconfigure, if that DACR creates a situation where  
4 the customer's outage exposure is reduced, so  
5 basically they are out of power less time, we capture  
6 that quantity so we know specifically how many  
7 customers, and so for SAIFI it's customers  
8 interrupted, so it's number of customers for that  
9 event, and that's the data that's used to determine  
10 with and without. It's very straightforward, data  
11 right out of our system.

12           Q. But the -- you can only capture that  
13 quantity of the minutes avoided or the interruptions  
14 avoided if the DACR's working correctly; is that  
15 correct?

16           A. Right. And what I'm saying is when the  
17 system works, it creates a customer interruption  
18 improvement. That customer interruption is what we  
19 capture.

20                   And if you refer to the Table 1 in the  
21 avoided CI column in the middle of the page in the  
22 blue, whenever we have those situations where DACR  
23 created an event where customers experience less  
24 outage from actual data from the actual event, it  
25 gets populated in that column.

1           Q. So in order to have the column that says  
2 "With DACR", you're assuming that the DACR equipment  
3 is on the circuit, it is working, has a successful  
4 operation, and then that's compared to having a DACR  
5 in place on the same circuit -- excuse me. Strike  
6 that. Let me try again.

7           You're saying that you have the DACR in  
8 place on the circuit that's working successfully, and  
9 you're comparing that to the same circuit that has no  
10 DACR technology?

11           MR. MC KENZIE: Objection. Misstates  
12 his testimony. He has never said anything about an  
13 assumption, he just explained how it works without  
14 assumptions.

15           MS. BOJKO: Actually, he agreed to my  
16 question.

17           ATTORNEY EXAMINER: I'm going to let him  
18 answer.

19           THE WITNESS: A better way of looking at  
20 this, that would explain it a lot better, is if you  
21 look at the Table 1, the orange section With DACR, I  
22 mean, that's the traditional view. That's data right  
23 out of our system just like we do for any other, you  
24 know, system-wide reporting.

25           And then like I described, we collect

1 the data from every event for where those  
2 improvements are, and that's the blue section.

3 So to get to the purple section, Without  
4 DACR, you take the way the system did perform, you  
5 add back in those things that were improved for the  
6 customer, and that's what you get, the purple  
7 Without.

8 So the SAIFI is a pretty straightforward  
9 calculation. It's number of customer interruptions.  
10 So without DACR it performed one way. You add back  
11 those customer interruptions, you rerun that very  
12 simple calculation, and that's what you get for your  
13 purple Without DACR. That's how we do the  
14 comparison.

15 By Ms. Bojko:

16 Q. Are you familiar with the Reliability  
17 Standards case that AEP Ohio has recently filed in  
18 case 16-1511-EL-ESS?

19 A. Yes, I am.

20 MS. BOJKO: Your Honor, at this time may  
21 I have marked as OCC Exhibit 25 AEP's application in  
22 case 16-1511-EL-ESS?

23 ATTORNEY EXAMINER: Sure.

24 MS. BOJKO: May I approach?

25 ATTORNEY EXAMINER: Sure.

1 (EXHIBIT MARKED FOR IDENTIFICATION.)

2 MS. BOJKO: Your Honor, it's 157 pages.  
3 I did bring a full copy, but I just brought the  
4 Application, itself.

5 MR. MC KENZIE: I have a copy. I'll use  
6 this one.

7 MS. BOJKO: No, I mean, I'm only going  
8 to use that page and not all the attachments.

9 MR. MC KENZIE: I would like the exhibit  
10 to be the full document.

11 MS. BOJKO: And that's why I brought it.

12 ATTORNEY EXAMINER: Thank you. This is  
13 Exhibit 25.

14 By Ms. Bojko:

15 Q. Is this the document that you believe  
16 you're familiar with that's AEP's application in  
17 16-1511?

18 A. Yes.

19 Q. Do you know that the Commission Rule OAC  
20 4901:1-10-10 requires electric utilities to perform  
21 customer surveys on a periodic basis, and to consider  
22 the results of the survey when establishing new  
23 reliability standards?

24 MR. MC KENZIE: I'll object to the  
25 extent it calls for a legal conclusion. If she's

1 asking about his understanding, I would have no  
2 objection.

3 MS. BOJKO: Well, I am. He is an expert  
4 witness that is testifying to all of these CAIDI and  
5 SAIFI standards.

6 ATTORNEY EXAMINER: Yeah, I'll overrule.  
7 You can answer.

8 THE WITNESS: I guess I'm not aware of  
9 that.

10 MS. BOJKO: May I approach, your Honor?

11 ATTORNEY EXAMINER: Sure.

12 MS. BOJKO: I'm not going to mark it,  
13 it's just the Code section.

14 By Ms. Bojko:

15 Q. Have you had the opportunity to review  
16 4901:1-10-10 in the course of your work for AEP?

17 A. I don't recall ever reading this  
18 document.

19 Q. If you look at the application filed,  
20 does the Company cite to Rule 4901:1-10-10(B)?

21 A. Yes.

22 Q. Let's turn to Attachment 2 to the -- I  
23 think it's Attachment 2 to your testimony.

24 MS. BOJKO: In my quest to save paper,  
25 your Honor, I inadvertently didn't copy Attachment 2.

1 Could maybe the witness borrow the Court Reporter's  
2 Attachment 2?

3 ATTORNEY EXAMINER: Let's go off the  
4 record.

5 (Discussion off the record.)

6 By Ms. Bojko:

7 Q. Do you have Attachment 2 to the  
8 application that AEP filed in 16-1511 now?

9 ATTORNEY EXAMINER: Do you know what  
10 page that starts on?

11 THE WITNESS: I found it.

12 MS. BOJKO: There are no page numbers on  
13 it, I'm sorry. It's after Attachment 1. It's  
14 towards the -- it's like three-fourths of the way  
15 back.

16 THE WITNESS: I do.

17 MS. BOJKO: Okay.

18 MR. MC KENZIE: Attachment 1 is only  
19 four pages, so if you find that, it's just right  
20 after that.

21 MS. BOJKO: Thank you.

22 By Ms. Bojko:

23 Q. Do you see that Attachment 2 is the 2015  
24 Service Reliability Perception Survey?

25 A. I do.



1           Q. And this is a customer perception  
2 survey, is that accurate?

3           MR. MC KENZIE: Your Honor, I'll just  
4 object right now. The witness said he was generally  
5 familiar with the case. I don't think we have  
6 established that he's ever seen the application or  
7 this part of it.

8           We're not going to oppose taking  
9 administrative notice of our filings in other  
10 dockets.

11          MS. BOJKO: I thought I did ask him if  
12 this was the application he recalled seeing and that  
13 he referred to, and he said yes.

14          MR. MC KENZIE: I thought he just said  
15 aware of the case.

16          ATTORNEY EXAMINER: Are you aware of  
17 this case?

18          THE WITNESS: I'm aware at a very high  
19 level of this case. I know we filed Service  
20 Reliability Standards. That's about all I know.

21          ATTORNEY EXAMINER: Okay.

22 By Ms. Bojko:

23          Q. Well, if you look at Page 12 of the  
24 application -- maybe this will be easier. It looks  
25 like on Page 12 of the application, which may be why

1 I didn't copy the whole thing, is a summary of the  
2 survey results; is that correct?

3 A. Looks to be.

4 Q. Okay. And in the application in the  
5 summary table, would you agree that the survey  
6 indicates that in the priority of items, most  
7 important to consumers about their electric service,  
8 34 percent, which is most in this table, responded  
9 that the cost of electricity was their highest  
10 priority?

11 A. I see that.

12 Q. And that the second highest priority was  
13 quickly restoring service at 32 percent; is that  
14 correct?

15 A. Again, I'm not -- actually, I've never  
16 seen this chart before, but that appears to be what  
17 it's stating.

18 Q. Well, this is -- this is a chart created  
19 by AEP. Is that your understanding? It's in AEP's  
20 application?

21 A. Yes.

22 Q. And keeping power outages to a minimum  
23 was the third priority with 20 percent of the survey  
24 respondents responding in that fashion; is that  
25 correct?

1           A. I see that, yes.

2           Q. And would you agree with me that SAIFI  
3 is a metric of the number of outages for the average  
4 customer, and that CAIDI is a measure of the duration  
5 of an average outage, or average time to restore?

6           A. That is correct, with one minor  
7 exception. CAIDI is actually the -- the outage time  
8 for the average customers that have an outage.

9           Q. Duration for an average outage if a  
10 customer has an outage; is that correct?

11          A. Yes.

12          Q. And the DACR technology seems to  
13 conflict with customer priorities for service if  
14 restoral times on circuits with DACR are taking  
15 longer than without DACR; is that correct?

16           THE WITNESS: Do you mind?

17           (Question read back.)

18           THE WITNESS: I guess you described a  
19 hypothetical that the answer would be yes. But I  
20 don't understand how that would work.

21           DACR is targeted to help reduce customer  
22 outages, so to me, at least at a minimum, in  
23 reference to the table you described, it seems  
24 consistent with keeping power outages to a minimum.

25 By Ms. Bojko:

1           Q. Well, and as you explained, CAIDI, which  
2 equals the sum of customer interruption durations  
3 divided by a total number of customer interruptions,  
4 increases with the deployment of DACR; is that  
5 correct?

6           A. Yes.

7           Q. Let's refer to Table 2, please, in your  
8 testimony.

9           MR. MC KENZIE: I'm sorry, was there an  
10 answer to the last question?

11                   (Answer read back.)

12 By Ms. Bojko:

13           Q. Can you turn to Table 2 of your  
14 testimony? In Table 2 do you have a worksheet  
15 associated with the calculation of the numbers  
16 referenced in Table 2?

17           A. What section are you referring to?

18           Q. Table 2. Do you have a worksheet  
19 associated with Table 2? I'm just asking if you  
20 created a worksheet in order to arrive at the numbers  
21 for Table 2.

22           A. It's my understanding that all the data  
23 in Table 2 came from Table 1. I was trying to cross  
24 reference and verify that it is all there. To me it  
25 appears that it is.

1 Q. So the answer is no, you didn't create a  
2 worksheet or have a worksheet?

3 MR. MC KENZIE: Your Honor, that  
4 mischaracterizes his testimony.

5 MS. BOJKO: I'm just trying to figure  
6 out if there's a hard document.

7 MR. MC KENZIE: Well, he just explained  
8 that all the data in Table 2 came from Table 1.  
9 There's a worksheet to Table 1.

10 MS. BOJKO: Well, I'm asking if he  
11 specifically created a worksheet for Table 2.

12 ATTORNEY EXAMINER: And I think he's  
13 answered that, so move on.

14 By Ms. Bojko:

15 Q. Table 2 indicates that a negative number  
16 shows improvement. So the larger the negative  
17 number, the greater the improvement; is that correct?

18 A. That is correct. On the -- Yes, that is  
19 correct.

20 Q. And Page 4 of your testimony, Lines 1  
21 through 3, where you say SAIFI continued to improve  
22 where DACR is installed, do you see that?

23 A. Did you say Lines 2 and 3?

24 Q. 1 and 3. 1 through 3 is that sentence.  
25 DACR technology continued to improve?

1           MR. MC KENZIE: I'm sorry. You've read  
2 two excerpts. They have to be read together to get  
3 the full meaning of the sentence, because he didn't  
4 say SAIFI improved, he said DACR technology continued  
5 to improve SAIFI on the circuits where it was  
6 deployed.

7           MS. BOJKO: Well, I can phrase my  
8 questions any way I ask.

9           MR. MC KENZIE: Not when you misstate  
10 his testimony.

11          MS. BOJKO: I'm not misstating his  
12 testimony, your Honor, and I'd appreciate if the  
13 witness can respond. I asked him, referring to  
14 Page 1, Lines 1 through 3 where he says SAIFI  
15 continued to improve where DACR is installed, I just  
16 asked if he saw that phrase.

17          MR. MC KENZIE: I'll object. That's not  
18 what this says. It does not say SAIFI continues to  
19 improve, it says that DACR --

20          ATTORNEY EXAMINER: Okay. We're looking  
21 at Lines 1 through 3 here on Page 4. Is there a  
22 question?

23          MS. BOJKO: Well, I just asked if he saw  
24 the referenced phrase before my question.

25          ATTORNEY EXAMINER: Do you see that?

1 THE WITNESS: Yes, I see the words that  
2 you described.

3 By Ms. Bojko:

4 Q. Okay. So when you said continued to  
5 improve SAIFI -- you see that?

6 ATTORNEY EXAMINER: Is there a question  
7 with that?

8 By Ms. Bojko:

9 Q. I'm sorry. I'm asking if a negative 8.6  
10 percent in 2015 is better than a negative 24.9  
11 percent in 2013?

12 A. Negative 8.6 SAIFI, as described on the  
13 Table 2 and the bottom right, is not as beneficial to  
14 the customers as the minus 24.9 on the 2013  
15 summation.

16 Q. So DACR technology over the 2013, '14,  
17 and '15 time period did not improve SAIFI, but  
18 instead it decreased SAIFI, it made SAIFI worse; is  
19 that correct?

20 A. No, that's not correct. So in every  
21 year that DACR has been in service on those circuits,  
22 when you compare the technology with and without  
23 DACR, every year provided a benefit to the customers.

24 So in 2013 that benefit was an  
25 improvement of 24.9 percent, compared to '15 it's an

1 improvement of 8.6 percent.

2 Q. Right. So the improvement decreased  
3 over the time period from 2013 to 2015. The  
4 customers did not receive as great of a SAIFI  
5 improvement; is that correct?

6 A. That is correct. But there also could  
7 be many variables that are outside the utility's  
8 control that affects those things, such as weather,  
9 where traffic accidents occur, what's the specific  
10 location of the outage. There's many things that go  
11 into that.

12 Q. And I want to talk to you about those in  
13 a minute. But I just want to understand your  
14 sentence that DACR continued to improve SAIFI, when  
15 the SAIFI was not as great of a benefit in 2015 as it  
16 was in 2013; is that correct?

17 A. Again, '15, when you compare DACR with  
18 and without, it still provided a reliability benefit.

19 Q. I understand. Just not as great?

20 A. Just not as great.

21 Q. And so what is the cost again -- I  
22 forget from our last -- what was the cost of  
23 installing the DACR circuit; do you recall that?

24 A. Subject to check, I think it's \$427,000  
25 a circuit.



1           Q.   Okay.  And that cost, whatever it is --  
2   we'll take your recollection subject to check -- that  
3   cost will be the same regardless of whether the SAIFI  
4   improvement is negative 1 percent or negative 10  
5   percent; is that correct?

6           A.   That's correct.  But we're driving to  
7   maximize savings, so we're definitely targeting to,  
8   you know, provide as much customer benefit as we can.

9           Q.   Let's turn to Page 5 of your testimony,  
10   Lines -- referring to Lines 15 and 16 of your  
11   testimony -- I'm sorry, I'm referring to Lines 6  
12   through 15, the question and the answer.  You talked  
13   about year-to-year comparisons here; is that correct?

14          A.   Yes.

15          Q.   And the Company is required to meet  
16   annual SAIFI performance standards; is that correct?

17          A.   System-wide, yes.

18          Q.   And the Company is required to report  
19   those system-wide annual SAIFI standards; is that  
20   correct?

21          A.   That is correct.

22          Q.   And you would agree with me that SAIFI  
23   is an important metric for measuring reliability?

24          A.   Yes, it is.

25          Q.   And on Page 7 of your testimony you

1 recommend that a more appropriate assessment of SAIFI  
2 is to look at a three-year average; is that correct?

3 MR. MC KENZIE: Could we have a line  
4 number, please?

5 MS. BOJKO: 13 through 15.

6 MR. MC KENZIE: Thank you.

7 THE WITNESS: Do you mind repeating the  
8 question?

9 (Question read back.)

10 THE WITNESS: Yeah, but -- Yes, but more  
11 specifically, we feel that it's best to look at the  
12 circuits' performance of with and without DACR if  
13 you're interested in looking at what improvement does  
14 DACR provide.

15 And then since there are things that are  
16 outside our control, like weather, location of  
17 outages, things like that, that it's best to look at  
18 that from a three-year perspective because that helps  
19 normalize some of those variances that are outside  
20 our control.

21 By Ms. Bojko:

22 Q. So even though you believe that a  
23 three-year average may be better than year-to-year,  
24 you also state in your testimony that year-to-year  
25 and three-year averages do not present a complete

1 picture of the benefits or performance of DACR?

2 A. I think there's a lot of ways to look at  
3 how reliability is improved. I'm saying my position  
4 is if you look at it with and without DACR, you  
5 really -- you drive to what you're really asking  
6 yourself, which is did DACR provide benefit.

7 And again, I think there's so many  
8 things that are outside our control, especially with  
9 DACR. If an outage happens at the end of a line or  
10 beyond a cutout, the system is not designed to  
11 improve the customer experience in those cases.

12 And we're not in control of where those  
13 outages happen, whether it's mainline, off mainline,  
14 whether it's a really lightly weathered season or  
15 not. So that's why the three-year average really  
16 provides benefit to help normalize that activity  
17 that's outside our control. That's my view.

18 Q. Let's look at Page 5, Line 20 of your  
19 testimony. Here you say that both the three-year  
20 average and year-to-year do not present a complete  
21 picture; is that correct?

22 A. Yeah, it's my understanding this  
23 testimony here points -- is trying to point back to  
24 showing that the DACR with and without, that SAIFI  
25 measure is a better view than kind of more the global

1 SAIFI measure.

2 Q. Okay. And let's get to those other  
3 factors that you keep wanting to take me to. It's on  
4 Page 6, Lines 6 through 8. Do you see the other  
5 factors that you have been referencing that are  
6 outside the Company control?

7 A. Yes.

8 Q. Are you aware of the Commission  
9 Inspection and Repair Standards included in  
10 4901:1-10-27?

11 A. I'm not knowledgeable on the details. I  
12 know that some exist.

13 Q. Well, it's fair to say that proper  
14 inspection, repair, and replacement of equipment help  
15 mitigate these events that are outside the control of  
16 the Company; is that correct?

17 A. Yes.

18 Q. Are you aware or familiar with the  
19 Enhanced Service Reliability Rider of the Company?

20 A. Again, from a high level perspective,  
21 not the details.

22 Q. You are aware that the Enhanced Service  
23 Reliability Rider is an extra cost to customers each  
24 month to have additional vegetation management  
25 programs?

1 MR. MC KENZIE: Object. I'll object to  
2 the term "extra cost". The Company's cost of service  
3 with its base rates and all its riders, is the cost  
4 of service, there is no extra.

5 ATTORNEY EXAMINER: Sustained.

6 MS. BOJKO: Well, I don't think I agree  
7 with counsel's interpretation there, but let's reask  
8 it a different way.

9 By Ms. Bojko:

10 Q. It's an additional cost to customers  
11 charged through a rider for vegetation management  
12 programs; is that correct?

13 A. That is correct.

14 Q. And just because of counsel's statement,  
15 it is a charge that is above and beyond what is  
16 already included in base rates for vegetation  
17 management; is that correct?

18 A. Yes.

19 Q. And are you aware that AEP has a  
20 Distribution Investment Rider, a DIR Rider?

21 A. I am.

22 Q. And this is a rider charged to customers  
23 each month for the infrastructure modernizations that  
24 AEP is performing; is that correct?

25 MR. MC KENZIE: Objection. Your Honor,

1 we had another witness that came here to talk about  
2 rate design and riders; that was Ms. Moore.

3 This is far outside the scope of this  
4 witness' direct testimony, let alone his rebuttal  
5 testimony.

6 MS. BOJKO: Your Honor, this has nothing  
7 to do with the riders and the calculation of the  
8 riders of Ms. Moore, this has everything to do with  
9 his claim of reliability improvements and the DACR  
10 improving the reliability and the Cost/Benefit  
11 Analysis of the DACR versus other programs.

12 I'm merely asking if he's aware of  
13 charges that -- riders that cover additional  
14 distribution infrastructure or vegetation management.  
15 He opened the door, your Honor, when he talked about  
16 all the things that are outside the control of the  
17 Company.

18 ATTORNEY EXAMINER: You can answer.

19 THE WITNESS: Do you mind reminding me  
20 of the question?

21 (Question read back.)

22 THE WITNESS: That is my understanding.

23 Again, not my area of expertise, but that's my  
24 understanding.

25 By Ms. Bojko:

1           Q. And it's your understanding that this is  
2 a charge -- a rider that's in addition to whatever  
3 may or may not be included for base rates for these  
4 activities?

5           A. Not my area of expertise, but I think  
6 that's correct.

7           Q. Well, wouldn't these two riders be --  
8 Enhanced Service Reliability Rider and the DIR Rider,  
9 directly impact the amount of control that the  
10 utility has over its SAIFI performance?

11          A. Actually, to answer your question, the  
12 answer is yes, but it's kind of flipped around. My  
13 view is it's just the opposite.

14                 So if the Company does an awesome job of  
15 driving the tree outages to the point that we have  
16 none, that can't -- so then when the DACR system has  
17 these exposure things, there's no events, so  
18 therefore the DACR wouldn't be in a position to  
19 provide any SAIFI reliability improvement. That's  
20 what we're trying to describe.

21                 If it's perfect weather, or if there's  
22 no such thing as tree trimming outages anymore, the  
23 DACR wouldn't have that opportunity to reconfigure.  
24 That's one of the things that we're looking at.

25          Q. I wasn't asking about DACR, I was asking

1 you whether these two riders and the activities that  
2 AEP performs under those riders, gives the utility  
3 control over a part at least of its SAIFI  
4 performance?

5 MR. MC KENZIE: Your Honor, counsel just  
6 proved my point. She's not asking about DACR. We're  
7 well outside the expertise of this witness, as he  
8 said many times.

9 ATTORNEY EXAMINER: I'll sustain.

10 MS. BOJKO: Your Honor, may I respond?  
11 He has SAIFI performance, and he states how SAIFI is  
12 improving, continued improvement of SAIFI, and that's  
13 just not true.

14 So I have a right to try to go after the  
15 credibility of the witness and what he does or  
16 doesn't know, and what he considered or didn't,  
17 before making those statements.

18 He also made very broad statements of  
19 items on Page 6 that are outside the utility's  
20 control, when all of these are included in the  
21 utility's control under these riders.

22 MR. MC KENZIE: Your Honor, that's false  
23 that these are under the utility's control through  
24 the riders. It's the focus on the riders that I  
25 object to.



1           He's not an expert in the Company's  
2 other riders. Counsel can ask questions about DACR  
3 reliability and SAIFI; that's what this testimony is  
4 about.

5           ATTORNEY EXAMINER: I'm going to  
6 sustain.  
7 By Ms. Bojko:

8           Q. On Page 6, Lines 6 through 11 --  
9 actually Line 3 through 11, when you make these  
10 statements, you are not taking into consideration any  
11 of the utility's programs under any additional riders  
12 outside of gridSMART; is that correct?

13          A. I don't know if I can answer that with a  
14 yes or no. I can tell you that when I -- when we  
15 wrote this section here, we were looking at it  
16 through the eyes of a DACR program.

17               So the DACR program -- you know, these  
18 things that are outside our control are truly outside  
19 our control. And where the squirrel chews and causes  
20 an outage has a dramatic effect on weather the DACR  
21 system provides customer improvement on reliability  
22 or not.

23               That's what I was trying to describe, is  
24 those things that are outside of -- outside the  
25 control.

1           Q. But you would agree with me that there  
2 are certain things that -- vegetation management  
3 practices that could be within the Company's control?

4           A. I think the Company works hard to manage  
5 our reliability across all different products or  
6 services. I don't know if that's the right word.

7                     But what I can say is from a DACR  
8 perspective, you know, even as you described, if we  
9 have a situation where we have -- say we mitigated  
10 lightning to the point where there's no lightning  
11 outages, that that's a dramatic effect on whether  
12 DACR is going to deliver a reliability improvement.  
13 And that's what I'm saying is outside our control.

14          Q. And when you say -- it's italicized on  
15 Page 6, Lines 21 and 22. When you say DACR tends to  
16 make SAIFI performance better than it would be  
17 without DACR, you're not doing a Cost/Benefit  
18 Analysis; is that correct?

19          A. No, this is looking at just the  
20 performance of the circuit with and without.

21          Q. Have you done a Cost/Benefit Analysis?

22          A. I mean, I think that's what our Business  
23 Case has done. We have shown that for the DACR  
24 technology over a 15-year life, that it has more than  
25 a billion dollars in benefits for the customers, as

1 compared to the \$427,000 per circuit, subject to  
2 check, figure we described before.

3 Q. And that is taking into consideration  
4 the reliability, the value associated with  
5 reliability that's in the Business Case attached to  
6 your testimony, that was revised based on the  
7 Stipulation and that came from the Berkeley National  
8 Laboratory; is that correct?

9 A. That is correct.

10 Q. Have you quantified the cost  
11 effectiveness of DACR?

12 A. Do you mind asking that a different way?  
13 I don't think I fully understand what you're asking.

14 Q. Well, have you tried to put a value on  
15 the cost effectiveness of DACR?

16 A. I think we just described how we took  
17 the Lawrence Berkeley National Lab, we applied its  
18 conclusions to assess a value associated with cost of  
19 an outage for the various customer classes.

20 Q. Okay. And in that evaluation was there  
21 any consideration -- a percentage attributed to it,  
22 or the 80 percent that you referenced earlier, was  
23 there any -- was there any percentage of the value  
24 attributed to or not attributed to when DACR only  
25 works part of the time?

1           A. I think that that is part of the  
2 calculation, because what you're looking at is, you  
3 know, when a customer interruption is avoided, what  
4 is that worth. So it would have to have avoided that  
5 outage to get a value.

6           Q. Right. But I'm saying, if you spent the  
7 money to install DACR, did they take into  
8 consideration that the DACR only works 75 percent of  
9 the time?

10           MR. MC KENZIE: Objection to the use of  
11 "75 percent". That's not been established.

12           ATTORNEY EXAMINER: I'm going to  
13 overrule. I think that's --

14           MS. BOJKO: Hypothetical.

15           MR. MC KENZIE: That's fine.

16           (Question read back.)

17           THE WITNESS: So the study was used to  
18 drive what is the value of that nonoutage. It  
19 doesn't look at the overall Business Case, and that's  
20 what we tried to do in our Business Case attached to  
21 the filing and to my revised testimony.

22 By Ms. Bojko:

23           Q. So you didn't discount the reliability  
24 measure included in the Business Case for DACRs only  
25 performing a percentage of the time?

1           A. We made some estimates of what the total  
2 number of customer minutes interrupted that would be  
3 saved. So it's my assumption that that would have  
4 included only when the system was working, because if  
5 it wasn't working we wouldn't have gotten the  
6 benefit.

7           Q. Well, you didn't -- you didn't discount  
8 the reliability value that you attribute to the  
9 Berkeley National Lab that's included in -- for the  
10 reliability value in the base case; is that fair?

11          A. I guess I still don't understand the  
12 question. We estimated that DACR full deployment, it  
13 should be able to reduce the customer minutes of  
14 interruption by up to 21 million customer minutes of  
15 interruption annually. I still stand by that  
16 estimate.

17          Q. Right. So I guess I'm saying that there  
18 was no discount attributed to a DACR only working  
19 part of the time, if you're aware?

20          A. I think just the opposite. I think we  
21 included that. I mean, I don't know how we would  
22 have came up with a -- I mean, if we -- it would have  
23 saved the customers 21 million minutes of  
24 interruption annually, and, you know, maybe didn't  
25 work, and there was another number like a million, we

1 wouldn't have added that million; it wouldn't have  
2 been part of the 21 million.

3 So I think the 21 million is total --  
4 it's our estimate of what we think that we can save.

5 Q. I'm sorry, where are you getting the 21  
6 million? I was referring to the reliability benefit  
7 number of 1.016 billion included in the Business  
8 Case. Are you referring to something different?

9 A. I'm going to pull it from my testimony,  
10 from the Business Case attached to my written  
11 testimony. I'm fairly certain it's -- the 21 million  
12 is referenced there.

13 All right. So in my written testimony,  
14 the Business Case attached, SSO-1, Page 4, there's no  
15 line numbers, it's in the second paragraph, last  
16 sentence.

17 "This could yield more than 21 million  
18 CMI per year on circuits serving more than 330,000  
19 customers in the project areas," and that's  
20 referencing Page 2, DACR project area.

21 Q. I'm sorry. We were talking about apples  
22 and oranges. I was talking about the value and  
23 you're talking about the 21 million customer minutes  
24 interrupted avoided. Is that right?

25 A. That's correct, yeah.

1 Q. So my question -- I think if you turn to  
2 Page 11 of your testimony, I think that's your  
3 original testimony -- I'm assuming you have that in  
4 front of you since you just referenced it?

5 A. I do.

6 Q. Okay. My question went to, you took the  
7 Berkeley study and then you updated the Business Case  
8 by multiplying the cost by the number of expected CMI  
9 saved. Do you see that?

10 A. I do.

11 Q. So that expected number assumes that the  
12 DACRs are working; is that fair?

13 A. Yes.

14 Q. Okay. So you didn't discount -- when  
15 you did an expected number to do the multiplication  
16 to arrive at the reliability value, you didn't take a  
17 discount based on DACRs not working properly?

18 MR. MC KENZIE: Objection. This has  
19 been asked and answered like three times now.

20 ATTORNEY EXAMINER: I'm going to  
21 sustain, actually.

22 MS. BOJKO: We finally got on the same  
23 page.

24 MR. MC KENZIE: I think he was on the  
25 page.

1 MS. BOJKO: No, he was not.

2 By Ms. Bojko:

3 Q. All right. Just so the record is clear,  
4 since counsel -- again, when he makes his comments,  
5 then I think maybe the record is not clear, so I want  
6 to make sure I understand what you're saying.

7 When you gave me the \$21 million number  
8 you were not associating a value in dollars to me  
9 with regard to the reliability benefit that's  
10 contained in the Business Case?

11 MR. MC KENZIE: Objection. Counsel said  
12 \$21 million. And I also think this has been asked  
13 and answered, but maybe you could clarify and we'll  
14 try again.

15 By Ms. Bojko:

16 Q. When you gave me the 21 million number,  
17 you were talking about CMI avoided, you were not in  
18 any way trying to explain to me that you believe that  
19 the reliability benefit that's included in the  
20 Business Case was -- had the value of \$21 million?

21 MR. MC KENZIE: Objection. That's the  
22 same question. He's answered it several times now,  
23 and I don't mean to be --

24 ATTORNEY EXAMINER: He can answer.

25 THE WITNESS: No, the 21 million is a



1 customer minutes of interruption avoided annually,  
2 which is our expectation for what the DACR system  
3 would do at its full deployment.

4 By Ms. Bojko:

5 Q. Thank you. And that number doesn't  
6 appear anywhere on the Business Case table on Page 9;  
7 is that correct?

8 A. No, that is a customer benefit, not a  
9 monetary benefit.

10 Q. Is it fair to say that the Company deems  
11 DACR used and useful as a capital investment when  
12 it's installed?

13 A. So Witness Moore does a better job of  
14 addressing questions on how rider applicability  
15 works.

16 Q. I'm not asking about the rider, I'm  
17 asking when the Company deems the equipment used and  
18 useful. If you don't know the answer -- do you know  
19 when the Company deems it to be used and useful?

20 A. I don't know for certain.

21 Q. Let's turn to Page 7 of your rebuttal  
22 testimony, please. In the question and answer  
23 beginning on Lines 8 and 9 you explained that  
24 pre-deployment should be compared to the post 2013  
25 deployment; is that correct?

1 MR. MC KENZIE: I'm sorry. Could we  
2 have a line number?

3 MS. BOJKO: I gave you question and  
4 answer.

5 MR. MC KENZIE: You seem to be quoting  
6 something, and I'm not seeing it.

7 MS. BOJKO: I'm not.

8 THE WITNESS: Do you mind rereading that  
9 question?

10 (Question read back.)

11 THE WITNESS: So in this section I  
12 describe that as a secondary option -- so if you're  
13 not going to compare DACR with -- sorry, the SAIFI  
14 with DACR and without DACR, a better way to look at  
15 it is over a longer period of time.

16 So in this example, instead of looking  
17 at it year-by-year, we propose a secondary method  
18 which would look at what is it in the most current  
19 three-year average compared to the pre-deployment  
20 average.

21 By Ms. Bojko:

22 Q. But in that analysis there's no way to  
23 know how a DACR may or may not have worked with  
24 regard to a specific event that occurred pre2013, is  
25 that correct, because weather events are different?

1           A. And again, that's why we prefer to do  
2 the With DACR and Without. This would be the  
3 secondary measure.

4           You're right, that doesn't look at  
5 overall the -- you're not -- you have different  
6 factors, and that's why we feel that with DACR --  
7 valuing SAIFI with DACR and without DACR is a better  
8 evaluation, if that's what you're looking for, how  
9 did the DACR system perform.

10          Q. I know we have talked about many today,  
11 but would you agree with me that the primary factors  
12 outside of DACR that would effect SAIFI would be  
13 changes in weather, changes in vegetation management,  
14 and changes in equipment failure --

15           THE WITNESS: Would you mind rereading  
16 that?

17           (Question read back.)

18 By Ms. Bojko:

19          Q. Changes in equipment failure rates.

20          A. I don't have any data to support that,  
21 or support anything different than that. Generally,  
22 you know, weather, the -- how the system performs,  
23 the equipment on the system, those are primary  
24 drivers.

25          Q. Okay. Could you turn to Page 9 of your

1 testimony, Table 4? And Table 4, the avoided  
2 customer interruptions due to DACR in 2015 are 14,681  
3 customer interruptions avoided; is that correct?

4 A. That is correct.

5 Q. Okay. And that's approximately less  
6 than half the avoided customer interruptions in 2013  
7 at 31,407; is that correct?

8 A. That is correct. But again, that has --  
9 like I said before, that has a lot to do with annual  
10 variations. There most likely was more  
11 opportunities, you know, in other years as compared  
12 to the year that you described.

13 Q. And the avoided customer interruptions  
14 due to DACR in 2015 is a decline from that in 2014;  
15 is that correct?

16 A. That is correct. But that doesn't mean  
17 that the DACR system worked any better or any less,  
18 it just means that there was less opportunities.

19 Q. And the customer interruptions in 2014  
20 is less than 2013 as well; is that correct?

21 A. Yes, for the same reasons described.

22 Q. So the number of customer minutes  
23 interrupted in 2014 and 2015 is less than what was  
24 interrupted in -- excuse me, let me try that again.

25 So the number of customer minutes

1 avoided -- number of customer minutes interrupted  
2 avoided in 2014 and '15 are less than the 2013  
3 customer minutes interrupted avoided in 2015?

4 A. That is correct.

5 Q. I said that wrong, I'm sorry. Let me  
6 try that one more time.

7 So the number of customer minutes --

8 MR. MC KENZIE: We'll stipulate the CMI  
9 means customer minutes interrupted.

10 By Ms. Bojko:

11 Q. So the number of CI avoided in 2014 and  
12 '15 are less than the number of CI avoided in 2013;  
13 is that correct?

14 A. That is correct. Again, same  
15 description I described earlier.

16 Q. And one last one. The avoided CI in  
17 2015 is less than the avoided CI in 2012; is that  
18 correct?

19 A. That is correct; the same situation.

20 Q. And the same would be true for the  
21 customer interruption minutes avoided 2014 and '15  
22 are less avoided minutes than 2013; is that correct?

23 A. That is correct.

24 Q. And 2015 is less avoided minutes than  
25 2012?

1           A. Again, the numbers are correct, and we  
2 can go through the whole chart. I mean, it's the  
3 same thing.

4           What I'm saying, and what I said  
5 earlier, is it doesn't mean that the system was any  
6 better or any worse, it means there was likely a  
7 different opportunity for the system to work.

8           Q. So the CIs avoided by DACR are  
9 declining, while the total CIs are increasing, as  
10 evidenced by the increasing SAIFI numbers; is that  
11 correct.

12           THE WITNESS: Would you mind rereading  
13 that?

14           (Question read back.)

15           THE WITNESS: Yes, that is correct.  
16 That's what this is showing. Again, it's weather and  
17 other variances as I described. You know, the  
18 Stipulation lays out a good method for ensuring that  
19 the DA system provides customer benefits, and that  
20 Stipulation calls for looking more on three -- looks  
21 at three-year averages rather than annual  
22 fluctuations for the reason I kept describing; that  
23 there's things that are outside the utility's  
24 control.

25           MS. BOJKO: If I may just have two

1 minutes, your Honor?

2 ATTORNEY EXAMINER: Sure. Let's go off  
3 the record.

4 (Recess taken.)

5 ATTORNEY EXAMINER: Okay. Back on the  
6 record.

7 MS. BOJKO: Thank you, your Honor. I  
8 have a few more questions.  
9 By Ms. Bojko:

10 Q. Sir, we talked a lot about SAIFI today.  
11 You believe that CAIDI is an important reliability  
12 metric as well, correct?

13 A. In regards to DACR performance, I think  
14 the biggest indicator whether the system is working  
15 or not working providing those customer benefits, is  
16 SAIFI.

17 Q. In general, do you believe that CAIDI is  
18 an important reliability metric outside of DACR?

19 A. I guess the average length of time a  
20 customer is out is important. But it doesn't really  
21 come into play with the DACR technology.

22 I mean, it's -- like I said before, it's  
23 known that it would go up, because we reduce a large  
24 pool of short outages and we're left with a longer  
25 duration of customers that have long outages. But

1 that doesn't mean that the experience is any  
2 different for them, it's just the calculation is a  
3 little bit different.

4 Q. Well, the Commission requires both --  
5 they have standards for both metrics, CAIDI and  
6 SAIFI; is that correct?

7 A. They do.

8 Q. And the Company has to report both SAIFI  
9 and CAIDI on an annual basis?

10 A. They do.

11 Q. Okay. And earlier today we talked about  
12 a provision of the Stipulation that was on Page 6 of  
13 the Stipulation, and we talked about measures that  
14 the Company is committed to. Do you recall that?

15 A. I do.

16 Q. And even if neither measure is met,  
17 customers still have to pay for the DACR equipment;  
18 is that correct?

19 A. Yes.

20 Q. And it's also correct that if neither of  
21 those measures are met, there are no penalties  
22 specified in this provision of the Stipulation?

23 A. There are no defined penalties listed  
24 here, but it does say that the Commission can  
25 determine whether it's violated the Stipulation, and



1 I would go on to assume that they will decide what  
2 that means and what to do from there.

3 Q. Let's turn to Table 3, please. In Table  
4 3 you talk about pre and post deployment, and that's  
5 with regard to DACR, is that correct, preDACR  
6 deployment and postDACR deployment?

7 A. That is what this table shows, correct.

8 Q. And isn't it true that by mid 2012 AEP  
9 had revised its vegetation management policies and  
10 had begun a four-year vegetation management cycle?

11 A. I'm not aware of the specific dates. I  
12 know that there was a ramp-up in that activity.

13 Q. So the ramp-up occurred post DACR  
14 deployment; is that correct?

15 A. Like I said, I don't know the specific  
16 dates.

17 Q. So other changes within the Company's  
18 system, or the Company's management, vegetation  
19 management policies could have contributed to the pre  
20 and postDACR deployment SAIFI performance listed in  
21 Table 3; is that correct?

22 A. Yeah, it is possible. And again, that's  
23 why I'm painting a picture that the way to look at  
24 DACR, if you're interested in its performance, is to  
25 look at it with and without. This is an alternate

1 view that we're proposing here.

2 MS. BOJKO: That's all I have. Thank  
3 you, your Honor. Thank you, Mr. Osterholt.

4 MR. MC KENZIE: Could we have just two  
5 minutes, your Honor?

6 ATTORNEY EXAMINER: Sure.

7 (Recess taken.)

8 ATTORNEY EXAMINER: Back on the record.

9 MR. MC KENZIE: Yes, your Honor.

10 - - -

11 REDIRECT EXAMINATION

12 By Mr. McKenzie:

13 Q. Mr. Osterholt, do you recall in  
14 cross-examination questions concerning whether  
15 Commission mandated inspection and repair  
16 requirements would mitigate outages?

17 A. Yes.

18 Q. Will Commission mandated inspection,  
19 repair, and other requirements mitigate all the  
20 outage causes that are beyond the Company's control?

21 A. No. A good example is vehicle  
22 accidents, location, and things like that.

23 Q. Let's go to Table 1 of your testimony,  
24 please. So this is Page 2, Table 1. Do you recall  
25 on cross-examination questions concerning the

1 performance of the DACR system, whether it worked or  
2 didn't work?

3 A. Yes.

4 Q. Now, if the DACR system installed as  
5 part of Phase 1 didn't work during an event in the  
6 years listed on this table, would that -- would there  
7 be any avoided CI or avoided CMI related to that  
8 event in the avoided CI and avoided CMI blue columns  
9 here?

10 A. No.

11 Q. Why is that?

12 A. Because we're capturing real data from  
13 that event. So if there were no customers saved, it  
14 would not contribute to the data in this column.

15 Q. So does the data in this column reflect  
16 actual performance of the DACR system?

17 A. It is actual data.

18 Q. Same questions for the DACR impact.  
19 If -- that's the DACR impact columns. If the DACR  
20 system didn't work during a particular event, would  
21 that be incorporated or would that be reflected in  
22 the DACR impact green columns?

23 A. If there was no customer avoided outage  
24 it would not be reflected in there. Again, that's  
25 the actual data.

1           Q. Okay. Let's turn to OCC Exhibit 25. Do  
2 you have that?

3           A. I do.

4           Q. If you could go to Page 12. Do you  
5 recall questions on cross-examination concerning  
6 Table 1 on Page 12?

7           A. I do.

8           Q. And the -- the second item down, it  
9 says, "Quickly restoring power when outages occur."  
10 Do you see that?

11          A. I do.

12          Q. And then 32 percent in the column next  
13 to it. Do you see that?

14          A. I do.

15          Q. Will DACR technology help to quickly  
16 restore power when outages occur?

17          A. Yes.

18          Q. How so?

19          A. A good example is as I described  
20 earlier, the kind of the two-stage approach. You go  
21 out and -- prior to DACR line crews find a problem,  
22 manually reconfigures circuits to allow the most  
23 customers to get back in service. That's done  
24 manually.

25                 With DACR we do that all automatically,

1 so all those customers who originally had, say,  
2 between an hour to two hour of an outage, we have  
3 eliminated that. So they are definitely getting  
4 restored power quickly, because all that's done in an  
5 automated fashion by the system in two minutes on  
6 average.

7 Q. And the next one down is, "Keeping power  
8 outages to a minimum." Will DACR help keep power  
9 outages to a minimum?

10 A. Yes, for the same reasons. So within  
11 that two minutes, you know, a system automatically  
12 reconfigures to put those customers back in service.  
13 So if they are less than five minutes, the rules say  
14 that's not even an outage. So all those customers  
15 are completely avoided in that.

16 MR. MC KENZIE: No further questions.

17 ATTORNEY EXAMINER: Ms. Bojko, anything  
18 further?

19 MS. BOJKO: Yes, your Honor. Just a  
20 few.

21 - - -

22 RECROSS-EXAMINATION

23 By Ms. Bojko:

24 Q. Keeping with the same chart, CAIDI is  
25 the Customer Average Interruption Duration Index and

1 represents the average interruption duration or  
2 average time to restore service per interruptible  
3 customer; is that correct?

4 A. That is correct.

5 Q. So that would be similar to quickly  
6 restoring power when outages occur, correct?

7 A. You can look at it different ways. Like  
8 I described earlier, if you're restoring power to  
9 those customers quicker because the automation is  
10 doing it rather than a physical line crew doing it,  
11 in my view that's quicker -- quickly restoring power.

12 Q. Well, CAIDI is the Commission's standard  
13 performance standard that measures the average time  
14 to restore service per interrupted customer, correct?

15 A. That is correct.

16 Q. Okay. And SAIFI is the System Average  
17 Interruption Frequency Index which represents the  
18 average number of interruptions per customer,  
19 correct?

20 A. Correct.

21 Q. Okay. And that would be keeping the  
22 number of interruptions to a minimum, correct?

23 A. I agree.

24 MS. BOJKO: That's all I have. Thank  
25 you. Thank you, Mr. Osterholt.

1 ATTORNEY EXAMINER: Anything further?

2 MR. MC KENZIE: No, your Honor.

3 MS. BOJKO: Your Honor, at this time  
4 we'd move for admission of AEP -- OCC Exhibit 25.

5 ATTORNEY EXAMINER: Any objection?

6 MR. MC KENZIE: Administrative notice I  
7 think would be more appropriate.

8 ATTORNEY EXAMINER: Okay. We'll take  
9 administrative notice.

10 MS. BOJKO: Thank you, your Honor.

11 ATTORNEY EXAMINER: And any objection to  
12 admission of AEP Exhibit 13? It will be so admitted.

13 (EXHIBITS ADMITTED INTO EVIDENCE.)

14 ATTORNEY EXAMINER: And I believe you're  
15 done, sir.

16 (Witness excused.)

17 ATTORNEY EXAMINER: Okay. Let's go off  
18 the record.

19 (Discussion off the record.)

20 ATTORNEY EXAMINER: Back on the record.  
21 Just to make this official, the parties have agreed  
22 initial briefs are due September 2nd, and reply  
23 briefs are due September 16th.

24 And if there's nothing further, then the  
25 hearing of this case will be submitted for Commission

1 decision. Thank you all.

2 (Thereupon, the hearing was

3 concluded at 3:25 p.m.)

4 - - -



CERTIFICATE

I do hereby certify that the foregoing  
is a true and correct transcript of the proceedings  
taken by me in this matter on Monday, August 15th,  
2016, and carefully compared with my original  
stenographic notes.

---

Valerie J. Grubaugh,  
Registered Merit Reporter  
and Notary Public in and  
for the State of Ohio.

My commission expires August 11, 2021

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Summary: Transcript of Ohio Power Company to Initiate Phase 2 of Its gridSMART Project hearing held on 08/15/16 - Volume IV electronically filed by Mr. Ken Spencer on behalf of Armstrong & Okey, Inc. and Grubaugh, Valerie