

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the :
Application of Columbus :
Southern Power Company for:
Approval of its Electric :
Security Plan; an : Case No. 08-917-EL-SSO
Amendment to its Corporate:
Separation Plan; and the :
Sale or Transfer of :
Certain Generating Assets.:

In the Matter of the :
Application of Ohio Power :
Company for Approval of :
its Electric Security : Case No. 08-918-EL-SSO
Plan; and an Amendment to :
its Corporate Separation :
Plan. :

DEPOSITION

of Karl G. Boyd, taken before me, Maria DiPaolo
Jones, a Notary Public in and for the State of Ohio,
at the Ohio Office of Consumers' Counsel, Ten West
Broad Street, Columbus, Ohio, on Friday, October 24,
2008, at 1:02 p.m.

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1 APPEARANCES:

2 American Electric Power
3 By Mr. Steven Nourse
4 and Mr. Dan Snider
One Riverside Plaza
Columbus, Ohio 43215-2373

5 On behalf of American Electric Power
6 Company.

7 Janine L. Migden-Ostrander
8 Ohio Consumers' Counsel
9 By Mr. Rick Reese
Assistant Consumers' Counsel
Ten West Broad Street, Suite 1800
Columbus, Ohio 43215-3485

10 On behalf of the Residential Ratepayers
11 of American Electric Power.

12 ALSO PRESENT:

13 Mr. Dave Cleaver.

14 APPEARANCES VIA SPEAKERPHONE:

15 Nancy H. Rogers, Ohio Attorney General
16 Duane W. Luckey
Senior Deputy Attorney General
Public Utilities Section
17 By Mr. Werner L. Margard III
Assistant Attorney General
18 180 East Broad Street, 9th Floor
Columbus, Ohio 43215-3793

19 On behalf of the staff of the Public
20 Utilities Commission of Ohio.

21 ALSO PRESENT:

22 Ms. Deborah Gnann;
23 Mr. Duane Roberts;
24 Mr. John Williams.

- - -

Friday Afternoon Session,

October 24, 2008.

- - -

STIPULATIONS

It is stipulated by and among counsel for the respective parties that the deposition of Karl G. Boyd, a witness called by the Ohio Office of Consumers' Counsel under the applicable Rules of Civil Procedure, may be reduced to writing in stenotypy by the Notary, whose notes thereafter may be transcribed out of the presence of the witness; and that proof of the official character and qualification of the Notary is waived.

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WITNESS

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OCC EXHIBIT

IDENTIFIED

1 - Notice of deposition

7

- - -

KARL G. BOYD

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

EXAMINATION

By Mr. Reese:

Q. Mr. Boyd, my name is Rick Reese. I'm an
Assistant Consumers' Counsel. I'm joined by Dave
Cleaver who's part of our analytical staff; he works
on a lot of distribution and reliability matters for
us. I just wanted to go over a couple of things with
you.

A. Okay.

Q. This is actually a fairly informal
process. As you know, there's a court reporter here
to take down whatever we have to say. Please answer
audibly and say yes or no as opposed to an uh-huh
or --

A. Yes.

Q. -- the way I talk some of the time.

If you can answer, I will let you answer.
We won't talk over each other.

MR. REESE: Excuse me.

Did someone just join us? Did someone
just join us?

1 MS. GNANN: Hi, Rick. I'm Deborah. I'm
2 muting. Deborah Gnann from the staff.

3 MR. NOURSE: And can we identify who else
4 is on the phone besides Vern Margard. I heard his
5 voice.

6 MR. REESE: Can everyone that's on the
7 phone please ID themselves?

8 MR. MARGARD: Well, you've got me of
9 course, Vern Margard. You've heard Deborah Gnann
10 from the staff.

11 MR. ROBERTS: Duane Roberts from staff.

12 MR. REESE: Okay.

13 MR. NOURSE: Hello. Thanks.

14 Q. (By Mr. Reese) Anyway, to continue,
15 Mr. Boyd, you are required to answer my questions
16 unless your attorney specifically instructs you not
17 to answer. Your attorney may object to a question,
18 but you can still answer the question. The
19 attorney-examiner can deal with any objections later.

20 If you need a break, just let me know,
21 we'll take a break. I just ask if there's a question
22 pending, that you finish answering that particular
23 question before we take the break; is that okay?

24 A. Yes.

1 MR. REESE: First thing I'd like to do is
2 enter our notice to take deposition as OCC Exhibit 1.

3 MR. NOURSE: Okay.

4 (EXHIBIT MARKED FOR IDENTIFICATION.)

5 Q. Mr. Boyd, did you bring any documents
6 with you today?

7 A. Yes.

8 Q. Can you tell me what those are?

9 A. A copy of my testimony.

10 Q. And is that it?

11 A. Yes.

12 Q. Okay. Now, most of my questions are
13 based right in your testimony, but I do have a number
14 of discovery questions, some answers that you
15 provided that I'll probably ask you some questions on
16 as we go through today. It is, just as a
17 housekeeping matter, it is my intention to be done no
18 later than 3 o'clock. I have to go over --

19 MR. NOURSE: We can stipulate to that.

20 MR. REESE: Can you?

21 MR. NOURSE: Sure.

22 MR. REESE: I have to go cross somebody
23 in another case.

24 Q. Okay. Let's get started. Let's go to

1 page 3 of your testimony. I'm looking specifically
2 at lines 3 to 5. In part of your testimony you're
3 providing an overview of AEP-Ohio's current power
4 quality and service reliability programs; is that
5 correct?

6 A. Yes.

7 Q. Now, the way I see you have this broken
8 down is power -- momentary interruptions go more to
9 the power quality questions and sustained outages and
10 service restoration programs go more towards service
11 reliability; is that correct?

12 A. Yes.

13 Q. Okay. And this is correct, I'm glad this
14 is down here, you have 32,200 miles of primary
15 overhead; that's correct?

16 A. That's line miles.

17 Q. Line miles?

18 A. Not circuit miles.

19 Q. Okay. Line miles, okay. And when you
20 say AEP operates and maintains approximately 520
21 stations, can you tell me what a station is?

22 A. A station is where the voltage is stepped
23 down from transmission or sub-transmission voltages
24 to the distribution delivery voltage levels.

1 Q. On page 4 of your testimony, at line 7
2 you talk about the overhead distribution lines, the
3 majority of these lines are located in rural areas.
4 Do you know what the approximate breakdown is, I'm
5 talking total company with Ohio Power and CSP
6 together?

7 A. No, I don't.

8 Q. Okay. Does Ohio Power or Columbus
9 Southern Power have a higher percentage of rural
10 lines?

11 A. I'd be speculating but I would say Ohio
12 Power has a --

13 Q. Probably Ohio Power?

14 A. -- a higher percentage.

15 Q. Okay. Down at line 16, still on page 4
16 of your testimony, you reference nonmajor event
17 outages, and I'm looking specifically at the
18 tree-related outages caused approximately 20 percent
19 of the sustained nonmajor event outages in 2007. Do
20 you see that?

21 A. Yes.

22 Q. Do you know what percentage of major
23 event outages were tree related?

24 A. No, I don't.

1 Q. Do you know who might know that?

2 A. I don't know that we've calculated that
3 number at this point.

4 Q. Okay. Let's move to page 5 of your
5 testimony. Beginning on page 5 you discuss
6 AEP-Ohio's distribution asset management programs,
7 and at line 13 you note that there are six of these.
8 Do these programs roughly track the way they're
9 listed here, do they roughly track the Commission's
10 Electric Service and Safety Standards, if you know?

11 A. You mean are they in the same sequence or
12 are they the same programs?

13 Q. Well, are they the same programs?

14 A. These are programs that we report to in
15 Rule 26 and 27.

16 Q. Okay. I actually have it, I'm just --
17 okay.

18 Can you tell me if any of AEP's asset
19 management programs that are required under the ESSS,
20 if any of those have been modified in the last three
21 years?

22 A. No, I don't. My history with AEP-Ohio
23 has just been since January 2008, so as to whether
24 they were modified in '6 and '7 or in '5, I don't

1 know.

2 Q. Okay. Let's go to page 6 of your
3 testimony. You discuss AEP-Ohio's expanded efforts
4 to minimize underground cable deficiencies through
5 two methods, cable injection or cable replacement.
6 Do you know what percentage of these efforts have
7 been use of cable injection versus cable replacement?

8 A. I can't speak historically, but in this
9 most recent year the higher percentage would be
10 injection, more than half.

11 Q. More than half?

12 A. Yes.

13 Q. Can you explain to me a little, just very
14 briefly, what the cable injection process consists
15 of?

16 A. How the work is performed or --

17 Q. Yeah.

18 A. -- what does it do for the cable?

19 Q. How it's performed.

20 A. That's performed by isolating the cable
21 segment between pad mount transformers or the pad
22 mount and the riser and injecting a Dielectric fluid
23 into the cable which is then allowed to cure which
24 rejuvenates or extends the life of the cable.

1 Q. Okay.

2 A. Typically there's no digging required
3 other than if the cable has been spliced, we may have
4 to dig to replace the splice.

5 Q. Is this done sometimes -- I probably am
6 learning just enough to be dangerous on this, but
7 I've heard this description before of bare cable
8 which is some of the older cable that's put in there.
9 Is this one of the types of cable that this injection
10 process would be used with?

11 A. For the injection process to work the
12 cable needs to have an open conductor where the
13 Dielectric fluids can pass down the length of that
14 conductor and typically that kind of cable was
15 manufactured prior to 1992, and typically for AEP
16 that has been open concentric cable.

17 Q. Concentric, okay. Let's go to page 7 of
18 your testimony, line 3, sentence beginning at line 3
19 "During 2007, for instance, AEP Ohio completed
20 extensive improvements to prevent overloading on
21 equipment, balance loads and voltage, enhance
22 protection schemes and improve its ability to restore
23 power to customers on a timely basis." Can you give
24 me some examples of these improvements?

1 A. Yes. We may have added capacity in a
2 station and added additional distribution circuits,
3 and in doing that we would have looked at what load
4 to transfer to those new circuits and we coordinated
5 the protection on the new circuits as well as those
6 circuits that were impacted with load that was
7 permanently transferred.

8 Q. Any other examples?

9 A. Well, there's examples as well outside of
10 a station, if we would need to reconduct our circuit
11 because it's no longer large enough to carry the
12 capacity of the demand from the customers on that
13 circuit, that would be another example of that.

14 And then there's also coordination that
15 we do on a periodic basis at circuits just to see
16 that they're still -- the zones of protection are
17 still coordinated properly and we may add additional
18 protective devices to minimize the number of
19 customers impacted when there is an outage.

20 Q. Now, is there any reason that this
21 particular work was conducted in 2007?

22 A. Well --

23 Q. You say "completed extensive." Okay, can
24 you tell me what prompted that particular effort?

1 A. That's work that we do every year.

2 Q. Okay. Let me go to page 8. There's a
3 lot of discussion in your testimony regarding
4 vegetation management, and there's discussion of both
5 a performance-based and cycle-based approach. I know
6 it's in your testimony and you can point it out to
7 me, but can you just give me a brief description
8 about what performance-based vegetation management
9 is?

10 A. Doing performance-based management is
11 looking at how the system has performed due to tree
12 outages, it's looking at our inspection of the
13 circuit to see how much the trees have grown and how
14 much they may be interfering with the distribution
15 lines. It's maybe in response to momentary
16 operations, but really looking at how that circuit
17 has been performing to make decisions around what
18 work needs to be done and what portion of the
19 circuits need attention, need activity.

20 Q. And that differs from cycle-based because
21 cycle-based very simply is every four years or every
22 five years a circuit might be cut end to end
23 regardless of those performance indicators.

24 A. That's correct. It's like you change the

1 oil in your car every 3,000 miles or every six
2 months --

3 Q. Okay.

4 A. -- without respect to how the oil is
5 performing, whether it has additional life or not.

6 Q. And just as sort of an overview, as part
7 of the enhanced service -- can you give me the --

8 A. Enhanced reliability service plan.

9 Q. Yeah, okay. ESRP. Can we call it the
10 ESRP or -- is it ESRP?

11 A. ESRP.

12 Q. ESRP. We can call it that. Let's call
13 it that for the rest of the deposition here. Overall
14 in terms of vegetation management, part of what
15 you're recommending is that AEP will adopt more of a
16 mix of the cycle-based and performance-based than it
17 currently has; is that --

18 A. That's correct.

19 Q. Okay. A little bit more of a focus on
20 the cycle-based than you have right now.

21 A. What we're proposing is a transition
22 period where we begin to do more cycle-based, but at
23 the end of a five-year period we would do
24 substantially more cycle-based than we would

1 performance-based.

2 Q. Okay. Still on page 8 of your testimony,
3 at line 16 you basically, you state that AEP-Ohio
4 will not be able to maintain its current level of
5 service reliability at its current level of spending
6 on the distribution system; is that correct?

7 A. Yes.

8 Q. And that's based on the increasing --
9 it's inflation and labor costs? Is that correct?

10 A. That's partially correct.

11 Q. Can you give me some of the other
12 factors?

13 A. It's also the aging of infrastructure
14 would be the other primary factor.

15 Q. Now, in terms of the aging of the
16 infrastructure, obviously the infrastructure's been
17 aging, I mean, as soon as it's put in the ground or
18 as soon as it's erected it starts aging. Why is it a
19 unique problem now? Why is aging infrastructure a
20 unique issue?

21 A. I don't believe that it's a unique issue
22 to AEP-Ohio. I believe that many utilities face that
23 same issue as infrastructure was put in place decades
24 ago, it is now reaching the end of its useful life.

1 Q. Now, the distribution system
2 infrastructure is composed of innumerable components,
3 poles, arresters, cutouts, substations. Aren't the
4 different components of the distribution system
5 replaced as they deteriorate?

6 A. Yes, many components are replaced as they
7 deteriorate or fail. What we're proposing is to be
8 more robust in being proactive in replacing
9 components near the end of their life.

10 Q. Now, we were talking just a second ago
11 about -- we were talking just a second ago about how
12 it's not -- the aging distribution system is not an
13 issue unique to AEP, but I guess what I was trying to
14 get at before is you've proposed through your
15 testimony this ESRP which results in additional
16 expenditures on distribution system reliability.
17 Excuse me. I lost my train of thought.

18 I guess what I'm having a hard time with
19 is it seems to imply that there hasn't been enough
20 spent on this replacement or on the aging
21 infrastructure in the past.

22 A. And I can speak to how much we've
23 invested in different distribution infrastructure in
24 the last 15 years or so, and it's been substantial,

1 but what's impacting us today is that there were lots
2 of facilities put in service several decades ago that
3 are now reaching the end of their life and what we're
4 facing is escalating costs at the time that those --
5 that infrastructure is in need of replacement or
6 renewal. And the cost of doing that work is
7 escalating, not just because of the price, but
8 because of the age of the infrastructure.

9 Q. Maybe you can use a hypothetical. Let's
10 take a wood pole. The useful life on -- what is the
11 useful life on one of those poles? Does it come out
12 to be 50 years? Or I don't know what it is.

13 A. It varies, but let's go with 50 years,
14 that's not a bad estimate.

15 Q. Okay. Just for the hypothetical.

16 A. Yeah.

17 Q. Is there a point in time at which a pole
18 is replaced whether it's passing a maintenance
19 inspection or not?

20 A. In compliance with what we filed in the
21 ESSS rules we have a ground line treatment and pole
22 line extension program where we treat the base of the
23 pole to extend the life, and that's where it
24 typically would rot, where it's in contact with the

1 earth, is that they also look at how much life is
2 left in that pole and we will begin to replace the
3 poles that won't last until the next inspection ten
4 years later.

5 So yes, we do, but it's near when the
6 pole is near the end of its life and prior to the
7 next inspection cycle.

8 Q. Would you say there are an abnormal
9 number of poles that have reached the end of their
10 life expectancy?

11 A. No.

12 Q. Okay.

13 MR. REESE: Did someone just join us?

14 MR. WILLIAMS: John Williams, PUCO staff.

15 MR. REESE: Did someone just join us?

16 MR. ROBERTS: Rick, I've got to leave.

17 The FE hearing is moving along.

18 MR. REESE: Excuse me. Can we go off the
19 record just a second.

20 (Discussion off the record.)

21 MR. REESE: Let's go back on the record.

22 Q. (By Mr. Reese) Okay, still with your
23 testimony, let's go to page 10, over on page 10 of
24 your testimony you finish up a discussion of some

1 core steel, transformer coil materials, and an
2 increasing cost of labor, and then there you discuss
3 this notion of all else remaining the same on line 5.
4 And you discuss it's reasonable to expect some
5 increase in equipment failures in year two compared
6 to year one, and that that may impact service
7 reliability unless AEP-Ohio is given the funding to
8 go beyond traditional means of maintaining the energy
9 delivery infrastructure.

10 What are traditional means?

11 A. The level of funding provided for in the
12 last rate case.

13 Q. Do you know off the -- well, I may have
14 it here somewhere else, but the ESRP expenditures, do
15 you know, and what you're planning on spending on the
16 ESRP, I think there's four major components, do you
17 know what percentage increase that represents over
18 current spending on those four programs?

19 A. No, I don't.

20 Q. Still on page 10 of your testimony at
21 line 19 you talk about power quality disturbances.
22 We're talking about momentary interruptions there?

23 A. Yes. Well, and they could be sustained
24 interruptions as well.

1 Q. Could those be surges or things like
2 that?

3 A. Not speaking of surges here. Momentary
4 outages.

5 Q. Okay. Now, if you know, is either the
6 frequency or duration of outages also up over the
7 last five years?

8 A. The duration of outages as measured by
9 CAIDI is down.

10 Q. How about SAIDI?

11 A. SAIDI is SAIFI times CAIDI --

12 Q. Right.

13 A. -- and that varies where in CSP it is up,
14 in OP it's been down most of the last five years, all
15 but one I believe.

16 Q. Okay. Over on page 11 of your testimony,
17 at line -- page 11, line 8, it actually starts on
18 line 7, "The more customers rely on electricity for
19 virtually every facet of their lives, the more
20 sensitive they become to service interruptions." Are
21 you referring mainly to momentary interruptions here?

22 A. No. I don't believe so.

23 Q. Okay.

24 A. I think both impact consumers, how they

1 use energy and how it affects their lives.

2 Q. Okay.

3 A. And I probably shouldn't go on, but the
4 momentaries are more apparent now than they were
5 historically.

6 Q. Because of digital --

7 A. Because of the digital age is that when
8 you have an analog clock, if it stopped for a second,
9 you didn't know.

10 Q. You just plugged it back in and reset it.

11 A. Yeah.

12 Q. Okay. Do you know if AEP is routinely
13 meeting its Rule 10 targets under the ESSS, SAIFI,
14 CAIDI, SAIDI.

15 A. What do you mean by "routinely"?

16 Q. Well, more often than not. Let's do it
17 that way.

18 A. There's four measures, and of the four
19 measures we've met those four measures I believe
20 49 percent of the time in the last four or five
21 years. I don't remember the time span.

22 Q. Do you know which -- let's talk about the
23 measures, there's CAIDI, SAIFI, SAIFI and -- wait, I
24 said one twice.

1 A. And MAIFI.

2 Q. MAIFI.

3 A. Yeah, there's five measures.

4 Q. Do you know which of the -- which of
5 those measures are causing more of a problem; do you
6 know? Is it --

7 A. SAIFI.

8 Q. SAIFI.

9 A. Excuse me. Excuse me. Yeah, SAIFI,
10 that's right.

11 Q. SAIFI, okay.

12 Now, do you expect there to be a -- let
13 me strike that. Let me rephrase.

14 Which of the measures do you think will
15 be impacted the most by the ESRP, SAIFI, CAIDI, or
16 SAIDI?

17 (Discussion off the record.)

18 Q. Let me ask again. The ESRP will
19 obviously, I would imagine the company anticipates
20 that the ESRP, if implemented, will improve some of
21 these reliability measures. Do you know what it
22 would have the greatest impact on?

23 A. On the indices that we report on it will
24 be SAIFI, but SAIDI is CAIDI times SAIFI so --

1 Q. So it would hit SAIDI as well.

2 A. It would hit SAIDI as well. But the root
3 measure you would move is SAIFI and it would also
4 have a substantial impact on MAIFI.

5 Q. Okay. Exactly, all right. So it is
6 going to have the most impact on frequency measures,
7 not necessarily a negligible impact on duration of
8 outages you think?

9 A. I don't think it will be negligible, it
10 will have --

11 Q. But lesser.

12 A. It will have a lesser impact on duration.

13 Q. On page 12 you discuss the use of a firm,
14 Market Strategies, International, to conduct some
15 surveys of AEP customers, and I think this goes to --
16 the use of the surveys goes to their satisfaction
17 with the current service and their reliability. And
18 also, going over to page 13 of your testimony,
19 there's some discussion of what they perceive to be
20 their expectations of reliability in the future; is
21 that correct?

22 A. Yes.

23 Q. And what the survey shows is that
24 24 percent of residential respondents and 33 percent

1 of commercial respondents believe that their
2 reliability expectations would increase. Do we know,
3 was there anything in the survey that let us know
4 what those expectations were? I mean, I realize they
5 said that the survey says that they would -- their
6 expectations would increase, but do we know how? Do
7 they expect fewer outages? I'm not clear on that.

8 A. I don't have any information that is
9 responsive to that.

10 Q. Okay. But I believe one of the points
11 you're trying to make in your testimony here at the
12 bottom of page 13 is that it appears from these
13 surveys, according to your testimony, that people's
14 expectations are increasing regarding reliability.
15 Would that be fair?

16 A. That's correct.

17 Q. I'm on page 15 of your testimony. The
18 discussion down at line 10 and 11 regarding infrared
19 scanning and electromagnetic interference detection
20 devices, is AEP -- are you proposing that AEP will be
21 using this technology quite a bit more in the future
22 than it has in the past?

23 A. That's correct.

24 Q. Can you give me an idea of how extensive

1 the use of either of these technologies is at the
2 current time?

3 A. At the current time they're more in
4 response to reliability issues, and what would we
5 would be proposing is to use those as part of the
6 overhead inspection and repair program in a proactive
7 versus a more reactive mode.

8 Q. So it's more of a switch from a reactive
9 to proactive mode is what you're talking about.

10 A. That's correct.

11 Q. Are these two technologies roughly
12 equivalent in their accuracy?

13 A. Both have their benefits and weaknesses.
14 As to the level of accuracy, it depends upon whether
15 the condition is present at the time of the
16 inspection. For example, if you were looking for a
17 thermal image of a hot connector, you would have to
18 have some load flow to heat the connector --

19 Q. I got that.

20 A. -- at that time, or if you're looking for
21 an electromagnetic signature, it would need to be
22 present at that time.

23 Q. So is that -- I'm sorry, I interrupted
24 you.

1 A. No, that was . . .

2 Q. Okay. So is it accurate to say that you
3 would use sort of a combination of the two
4 technologies?

5 A. We'd really be using them to find
6 different failure modes on the circuits, is that the
7 thermal imaging is more around identifying heating
8 due to thermal loads or corrosion in connections such
9 as where the electromagnetic is more around arcing
10 and sparking and electrical tracking across
11 insulative devices and such. So they're used for
12 different purposes.

13 Q. Okay. Are you familiar -- let me give
14 you a little background. We had somebody come in and
15 do a demonstration for us a couple months ago with
16 Exactor technology. Are you familiar with that?

17 A. No, I'm not familiar with the term
18 Exactor.

19 Q. Exactor is probably just the name of the
20 company. Okay. It's sort of RF technology for
21 detection probably similar to --

22 A. Similar to electromagnetic, yes, that's
23 RF.

24 Q. Okay. Now, you've discussed -- we've

1 been talking a little bit about this technology being
2 used a little bit more proactively. Is there some
3 order of magnitude increase that you'll be using it
4 than you do now?

5 A. Yes. And I can't say it's tenfold or a
6 hundred fold more than we do now, but it's
7 substantially more than we do now to identify
8 equipment near the end of its life and identify
9 problem equipment before it causes an outage.

10 Q. Okay.

11 MR. REESE: Did someone just join us?

12 MR. ROBERTS: Rick, it's me, Duane.

13 MR. REESE: Okay.

14 Q. I'm over on page 17 of your testimony,
15 down at line 6, the plan focuses on the leading
16 outage causes, and then you list the four major
17 components of the plan. Do these four components
18 cover 20 percent, 30 percent of existing leading
19 outage causes? I mean, what can you tell me, it's
20 probably broken down somewhere else, but just overall
21 the four defined.

22 A. Well, equipment failures are 33 percent,
23 tree related outages --

24 Q. Twenty.

1 A. -- are 20 percent.

2 Q. Okay.

3 A. They would also pick up the underground
4 cable failure and percentagewise that's not very high
5 but we're looking at 60, 70 percent.

6 Q. 60, 70 percent of the leading outage
7 causes.

8 A. That's right.

9 Q. Okay.

10 A. I know that the ten leading causes cause
11 93 percent of the outages and we're addressing --

12 Q. The highest of those.

13 A. That's right.

14 Q. Okay. Let's look on page 19 of your
15 testimony. Down at line 10, 10, 11, and 12, you talk
16 about comprehensive inspection of hardware and
17 equipment on each structure by conducting any
18 combination of the following, and then you talk about
19 walking the circuit versus drive-by to visually
20 inspect facilities. Aren't all your circuits walked
21 today?

22 A. No.

23 Q. They're not. Do you know what percentage
24 of the circuits are walked?

1 A. No, I don't.

2 Q. How are most circuits --

3 A. Driven.

4 Q. -- inspected? Driven?

5 So if the plan is approved, would every
6 circuit be walked?

7 A. Yes. Over the five-year period.

8 Q. Right. Right. I asked something related
9 to this earlier, but looking at your testimony on
10 page 22 at line 16 you discuss chart 3 and the top
11 five causes of equipment failures on distribution
12 lines excluding major events and transmission-caused
13 outages. Isn't it important to know the top five
14 causes of equipment failures during major events?

15 A. Yes, but the reporting excludes major
16 events so that's the information that we typically
17 exchange. But we believe these programs will also
18 have significant benefit to eliminate outages during
19 extreme weather events.

20 Q. Let's go to page 24 of your testimony.
21 At line 3 you talk about, on chart 4, once a circuit
22 has been fully mitigated. What do you mean by "fully
23 mitigated"?

24 A. Is that we've done that walking

1 inspection, we've done the climbing inspection, and
2 we've implemented the necessary repairs and
3 replacement.

4 Q. Okay. You said you're forecasting a
5 40 percent reduction in distribution primary
6 equipment related outages. Distribution primary
7 equipment, can you tell me the examples of what that
8 equipment is, distribution primary equipment?

9 A. It's equipment that's used to transmit or
10 control the primary voltages, the 12,000 volt to
11 19,000 volt, as opposed to the voltages that would
12 serve homes that run into the house.

13 Q. I got you.

14 Let's look at chart 4 on page 25. The
15 chart reflects an increase in equipment interruptions
16 from -- well, from 2004 levels they were up in 2005
17 and 2007. Do you have any idea why that might have
18 happened?

19 A. We're seeing an increasing trend on
20 equipment failures, but why one year is somewhat
21 different than another, it could be due to the type
22 of weather we've had, you know, have we had a lot of
23 rain, has there been a lot of lightning that might
24 have damaged more equipment, or is it just the little

1 bit of randomness of when something chooses to fail.

2 Q. In the chart we see a downward trend
3 beginning at the end of year one and end of year
4 three. What needs to take place for that downward
5 trend to continue? The ESRP is scheduled for three
6 years?

7 A. That's correct.

8 Q. What would be necessary fundingwise for
9 that downward trend to continue?

10 A. We would need to fund the remaining two
11 years of the five-year inspection program to make
12 that chart continue to get the full benefit. Within
13 the three years we would have only completed 60
14 percent of the distribution circuits.

15 Q. On chart 5 on page 26 you're discussing
16 the enhanced overhead inspection and mitigation
17 initiative, miles to be inspected, and this looks
18 like this is about 21,000; is that right?
19 21,000 miles?

20 A. 21,500, yes.

21 Q. Thank you. And that's out of the, what,
22 32-2? Are these line miles or circuit miles?

23 A. These are circuit miles. So this would
24 be out of 36,000.

1 Q. Out of 36.

2 A. That's correct.

3 Q. So I can work on my math skills, what's
4 the difference between a circuit mile and a line
5 mile?

6 A. Has nothing to do with math.

7 Q. Oh, all right.

8 A. It simply is in some locations like for
9 right-of-way clearing we work in line miles because
10 in some locations there may be more than one circuit
11 on the structure, but if you trim the tree it works
12 for both circuits, but we don't count it twice.

13 Q. I got you. Okay. Makes sense.

14 Okay. Do you know why -- I'm down to the
15 bottom of page 26. Why is cycle-based vegetation
16 management taking a more front and center role under
17 your ESRP than it has in the past?

18 A. The cycle-based program is more proactive
19 than the performance-based, and we would be trimming
20 some trees that we may not get to on -- otherwise in
21 systematic way. You may have a tree in a
22 performance-based that may have three years before it
23 causes a problem, but in a cycle-based program you
24 would trim that tree anyway; in a performance-based

1 you would not.

2 Q. Now, the proactive approach, I guess I
3 know we discussed it in other contexts, but is that
4 sort of an overarching explanation or goal of the
5 ESRP? Is it in general a more proactive approach?

6 A. Our customers are telling us they expect
7 service reliability to improve and momentary outages
8 are causing them inconvenience, and so we know that
9 these programs are the best way, most cost-effective
10 way to not only address sustained outages but
11 momentary outages.

12 Q. That really irritated me once I got a
13 DVR.

14 Okay. Let's go to page 27. Up at the
15 top of page 27 you're discussing increased
16 expenditures on vegetation management. Can you tell
17 me what prompted the increased spending on vegetation
18 management over the 2004-2005 time period?

19 A. No. I'm really not familiar with what
20 occurred in those years.

21 Q. Do you know if any of that, if you know,
22 was any of that a result of any service quality
23 related cases at the Commission?

24 A. I don't know for certain. I'd be

1 speculating.

2 Q. Okay. The sentence beginning at line 4,
3 ". . . reviewing circuits which received incremental
4 vegetation management work, the Companies were able
5 to realize a 62 percent reduction in outages
6 associated with trees within rights-of-way."

7 Do you know -- so this review was
8 specific to X number of circuits. Do you know what
9 number of circuits that 62 percent reduction took
10 place in?

11 A. No, I don't.

12 Q. At line 10 and 11 of your testimony on
13 page 27 you state ". . . AEP Ohio proposes to balance
14 its performance-based approach to reflect a greater
15 consideration of cycle-based factors." Do you know,
16 what does this greater consideration mean?

17 A. It's doing more end-to-end circuit
18 clearing. It's trimming trees that may not be an
19 immediate problem. It's doing more record-keeping
20 around the nature of the tree, the species of the
21 trees on the circuit and such so that we can be more
22 proactive and maintain those circuits as the tree
23 growth changes quite a bit from one species to
24 another and a cycle based may not be appropriate for

1 every tree because those growth rates or the standard
2 trimming clearance may not be appropriate because of
3 that growth rate so you need to, you know, balance it
4 based upon the type of vegetation that's along the
5 circuits and where that vegetation may be.

6 Q. Okay. I don't mean to jump ahead but I
7 think I saw -- aren't you proposing basically a
8 four-year cycle-based approach as part of the ESRP?

9 A. We want to move to a four-year
10 cycle-based, but it will take us five years to get
11 there.

12 Q. Does that mean you would initiate a
13 four-year cycle-based approach at the end of the five
14 years, or that it would take you five years to do the
15 first cycle?

16 A. Well, it would take five years to do the
17 first cycle. Then at the end of that five-year
18 period most of the forestry men would be on a
19 cycle-based, but you would still need those
20 components to address changing conditions along the
21 circuit due to, you know, the differences in
22 pregrowth or danger trees that, you know, a top may
23 have broken off and is leaning against -- I mean, you
24 still have to keep some performance-based, you simply

1 can't walk away and not look again for four years.

2 Q. So the five-year period as part of this,
3 especially at the beginning as part of this ramp up
4 you discuss because you'd have to increase the size
5 of the crews and -- okay.

6 A. That's correct.

7 Q. And when you would implement a four-year
8 cycle, I think what I had reviewed suggested that you
9 actually stated that four years would actually mean
10 48 months. Trust me, it's not a dumb question. Four
11 years would mean four years so you would complete a
12 cycle of trimming for each circuit every four years?

13 A. Well, I guess I'm not going to say it's
14 so precise that if we trim this circuit four years
15 ago in April that it's April again that we trim it.

16 Q. But it wouldn't be -- it wouldn't be 72
17 months. It wouldn't average out to four years. You
18 mean for it to be a four-year cycle.

19 A. Right.

20 Q. And some would be cut sooner and some
21 might be done in 50, 52, 53, but -- the reason we ask
22 is we've had some experience with other things where
23 cycles -- a four-year cycle wasn't really a four-year
24 cycle.

1 A. But our goal is to trim most circuits
2 every four years in this program.

3 Q. All right. Page 28 of your testimony, at
4 lines 19 and 20 you're discussing the employment of
5 additional resources, you say it's "approximately
6 equivalent to doubling the current number of tree
7 crews working in Ohio." Do you know, have the number
8 of tree crews declined in recent years with AEP like
9 over the last five years, do you know?

10 A. No, I don't believe they've declined. As
11 pointed out earlier in the testimony, there was an
12 increase in spending in '4 and '5, in '07 there was
13 also an increase in spending, and so I'd say in the
14 last five years the number of crews has not declined.

15 Q. Okay. Let's go to page 30 and look at
16 chart 6. I'm looking at the number of tree
17 interruptions and I see they were up a bit over 2004,
18 2005, and 2006. Is there any indicator of why they
19 would have been up or is it just a blip?

20 A. I think the increase in 2007 is
21 reflective of the change in activity from '4 and '5.

22 Q. Okay. Now, again, we see this decline,
23 projected decline through the end of year one, two,
24 and three under the ESRP. Is this basically the same

1 as the equipment issue we talked about earlier, that
2 the funding would need to be continued for years four
3 and five to keep that downward slope?

4 A. That's correct. Then at the end of year
5 six when the benefits can be measured from the first
6 five years we would expect the level to stabilize the
7 plateau at that new level.

8 Q. Okay. Go to page 33, at lines 10 and 11
9 on page 33 you talk about the plan, this is regarding
10 enhanced cable initiative, the plan may change over
11 time specified -- over the time period specified due
12 to other emerging issues. Does that mean other
13 issues besides the enhanced cable initiative or that
14 you may not devote the same amount of resources to
15 the cable? I'm not quite sure.

16 A. There may be new technology that we might
17 be able to use that would allow us to take the
18 proposed spend that comes with this plan to extend
19 it, or there may be another cable type that may need
20 to be addressed that might have a different per-unit
21 cost that we need to address that's more of an issue
22 than what was included in the plan.

23 Q. Okay.

24 A. But our intent would be to use the

1 dollars for this plan for cable work and to maximize
2 the customer benefit as a result.

3 MR. REESE: Is it okay, Steve, if we take
4 five minutes?

5 MR. NOURSE: Sure.

6 MR. REESE: Is that okay with you?

7 (Recess taken.)

8 MR. REESE: Back on the record.

9 Q. Mr. Boyd, I have a copy of questions I
10 want to ask you regarding some discovery responses
11 and I need to make sure I've got copies of these for
12 you before I ask them. Most of these are in response
13 to discovery requests, the third request from the
14 staff, and any of these that I ask you a question on
15 I'll hand to your counsel and he can take a look and
16 we'll go from there.

17 A. Okay.

18 Q. As I said, I've got a lot of things
19 tabbed here but some of these are going to have to
20 wait. One of the questions I have is actually from
21 our third set of interrogatories, interrogatory
22 request 3-50. I've got copies of that.

23 To the extent -- I'm reading from the
24 interrogatory. "To the extent the Company has not

1 followed its vegetation management plan as filed with
2 the PUCO, what are the reasons for deviation from the
3 vegetation management plan and how has each deviation
4 been communicated to the PUCO?"

5 Now, your response here is you've not
6 deviated from the vegetation management plan because
7 the plan is intended to change as circumstances
8 warrant. How would anyone know whether you were
9 following your plan?

10 A. Our filings, I think it's the Rule 26
11 tells what our plan is for vegetation and for the
12 current year and says what we're going to do for the
13 subsequent year, and I think we've done that.

14 Q. Well, if I read your response here, the
15 reason you haven't -- the company hasn't deviated is
16 because it's intended to change. So if staff --
17 would staff be able to determine that you hadn't
18 followed your plan?

19 A. It's a performance-based plan and so the
20 details aren't specified exactly as to what circuit
21 or what location would be trimmed, but the number of
22 line miles to be cleared or the expenditure is part
23 of that plan.

24 Q. Would you anticipate that the approval of

1 the ESRP would result in a filing of an update to
2 your vegetation management plan with the Commission?

3 A. Yes.

4 Q. And would that have more or different
5 benchmarks so that a deviation from the plan could be
6 examined or noted?

7 A. Yes. I believe it would have more
8 benchmarks, but -- especially in early years, there
9 would still be substantial performance-based before
10 we could move to a cycle-based.

11 Q. Okay. I'm looking at interrogatory
12 request No. 6, and again this was responsive to the
13 staff, talking about the deficiencies on the enhanced
14 inspection program, and you said the primary method
15 to track deficiencies would be using a work
16 management system. Can you tell me what the work
17 management system is?

18 A. Yeah. We have a work tracking system
19 where we input the work to be done, location, the
20 nature of the work, and then that is routed through
21 the scheduling supervisors to the crew to do that
22 work, then they report against that work plan.

23 Q. Okay. I'm looking at interrogatory
24 request No. 8, again from the third request from

1 staff, this discusses the impact of the enhanced
2 overhead inspections and mitigation initiative, at
3 least once it's been fully implemented. Your
4 response here indicates that the overall impact on
5 system SAIFI would be 10 percent for Columbus
6 Southern and 9 percent for Ohio Power as compared to
7 2007 performance. Do you see that?

8 A. Yes.

9 Q. And that reduction would be realized at
10 the end of year six of the five-year program. Can
11 you tell me, what does that mean, at the end of 2012?
12 End of 2013?

13 A. Well, if approval for the plan was given
14 such that we could have one year end at 2009, is that
15 the initial request in the ESP filing is for three
16 years but this is a five-year plan --

17 Q. Five year.

18 A. -- so if we receive sufficient funding to
19 carry it through 100 percent of the line miles that
20 would make it '14, is that you would need a time
21 period to measure the performance and that's what the
22 year six is about is that --

23 Q. I got you.

24 A. -- you do work --

1 Q. Then you measure.

2 A. -- then you measure how it performed.

3 Q. Okay.

4 A. But on the circuits where the work is
5 performed you would see that in the subsequent -- at
6 the end of the subsequent year, is that this is
7 speaking to the overall plan versus --

8 Q. The overall plan --

9 A. -- versus a per circuit basis.

10 Q. I understand. Okay.

11 I'm looking at interrogatory request
12 No. 25, again, from the staff third request that I
13 talked about earlier, in here we're talking about the
14 distribution inspection program, you mention here
15 that in 2007 the cost of this program was -- averaged
16 \$192 per mile for the 5,534 miles inspected. Do you
17 know if this \$192 per mile is reflective of an
18 average for the rest of the system, or is there any
19 way to know that?

20 A. What do you mean by "rest of the system"?

21 Q. Well, in 2007 I take it 5,534 miles were
22 inspected and the average cost for that was \$192 per
23 mile. I take it that that average would go -- you
24 think that would go up next year just because of

1 inflation, labor costs, materials costs, et cetera?

2 A. Yes, I would, a little bit for next year.

3 Q. So there was nothing unique about these
4 particular miles, this could have been a mix of
5 rural, urban.

6 A. No; I'm not aware that these were special
7 miles; that they would be an average of what we'd see
8 over the 36,000 distribution circuit miles that we
9 have.

10 Q. Okay. I have a series of questions that
11 involve interrogatory request No. 51 through 56, and
12 my colleague Mr. Cleaver ~~saves~~ trees so these are
13 double sided so some will be on the back side.
14 Again, all of these of course are based on if you
15 have any knowledge of it yourself. One of the
16 questions I had was looking at -- this is a series of
17 questions about the costs per mile of vegetation
18 management program both back to 2000 and then in
19 2003, 2007, and then projected out for your plan.

20 One of the questions I had in general was
21 I note that Columbus Southern Power is -- the
22 expenditures are significantly higher on O&M
23 historically. If you look at, just starting with
24 No. 51, you've got -- talking O&M, you've got

1 \$3,300 per mile for CSP and \$1,200 per mile for Ohio
2 Power. Do you know off the top of your head why
3 those costs are so different?

4 A. Between CSP and OP?

5 Q. Uh-huh.

6 A. Yeah. I think it's the geography and the
7 urban areas more so for CSP, the tree density is
8 higher overall, there are more difficult locations to
9 trim in than the city of Columbus to do a mile when
10 you're dragging out of back lots and those kind of
11 things versus if you're up in Wooster and you're
12 driving the truck down along the road to cut -- trim
13 the tree.

14 Q. Okay. So you would -- you're thinking
15 that a lot of that is just the difference between
16 urban and rural and --

17 A. And the nature of the rural between
18 Columbus Southern and Ohio Power.

19 Q. Okay. I probably should have made
20 another but this is just a chart that I put together
21 from the series, but one of the other things I noted
22 was that if you look, again, at Ohio Power on let's
23 just take O&M for instance, in 2007 you're looking at
24 \$1,200 per mile -- or 2000, I'm sorry. You're

1 looking at \$1,200 per mile on O&M and in 2007 you're
2 looking at \$6,307 per mile. So over that seven-year
3 period you're looking at a huge, what is that, 3-,
4 400 percent increase.

5 What would cause an increase of that
6 dimension in O&M?

7 A. Part of it is cost escalation, price
8 escalation, but the bigger component is likely to be
9 the moving away from more of a circuit trimming
10 program to a performance based where you're really
11 working on the portions of the circuit that are
12 dealing with the issues where there's more trees and
13 more tree problems. You're not including in the
14 mileage count those miles that have scant trees, so
15 you're really engaged where the work is the most
16 difficult.

17 Q. Do you know if these expenditures in 2007
18 reflect additional expenditures that came out of the
19 Commission case, the 03-2570 case?

20 A. That would not change the cost per mile.
21 That may change the number of miles.

22 Q. That's right. It could have changed the
23 number of miles, though.

24 A. Yeah.

1 Q. Just looking at interrogatory request
2 No. 55, and this really isn't that much different
3 than the other responses, but let's look at this
4 response. "For the most recent complete year 2007
5 the average O&M cost per mile to complete the
6 company's current distribution vegetation management
7 program was," do you know when the current plan was
8 implemented? Have there been a lot of changes to the
9 current plan recently?

10 A. No, I don't.

11 Q. You don't know if it was amended in --
12 beginning in 2008 or not?

13 A. In the ESSS rule filings I don't know
14 what rules might have been changed from '6 to '7.

15 Q. Okay. Let's talk about the interrogatory
16 request No. 83. Here you go. This question, this
17 interrogatory concerns an assumption that the plan is
18 approved, the ESRP, and that you compare SAIFI and
19 CAIDI performance of 2012 to the three-year period of
20 2005 through 2007, and for you to forecast or predict
21 what type of impact this would have on SAIFI and
22 CAIDI.

23 Now, my understanding from reading this,
24 then, is that you would be forecasting about, I have

1 to remember how these are -- SAIFI is measured in
2 1.68, SAIFI and CAIDI for CSP are 1.68 and 121. Now,
3 the 1.68 stands for what, is that 1.68 hours?

4 A. The system -- no, that's the system
5 average interruption frequency index so on average a
6 customer would be out 1.68 times a year.

7 Q. Okay. And the duration for the customers
8 who experience an outage would be 121.

9 A. For those customers that experience an
10 average outage it would be 121.

11 Q. Got you. Yeah. Okay.

12 I tried to do that --

13 A. That's minutes.

14 Q. I understand. Okay, now I'm with you.

15 All right. So in response to this request, the way I
16 wrote it down myself, it looks like you're predicting
17 a .19 decrease in the frequency of outages for the
18 CSP customer if the plan is put into place, and
19 somewhere around a little bit more than 8 minutes
20 decrease in CAIDI; is that right?

21 A. For CSP customers at the end of --

22 Q. At the end of the plan.

23 A. -- three years.

24 Q. At the end of three years.

1 A. That's correct.

2 Q. Okay.

3 MR. REESE: Hold on just a second.

4 I think that's all I have for now.

5 Staff, Vern, do you have anything?

6 MR. MARGARD: I don't. You're a man of
7 your word.

8 MR. REESE: Yeah, trying to do that. I
9 got to come over to your place.

10 (The deposition concluded at 2:41 p.m.)

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1 State of Ohio :
2 County of _____ : SS:

3 I, Karl G. Boyd, do hereby certify that I have
4 read the foregoing transcript of my deposition given
5 on Friday, October 24, 2008; that together with the
6 correction page attached hereto noting changes in
7 form or substance, if any, it is true and correct.

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Karl G. Boyd

I do hereby certify that the foregoing
transcript of the deposition of Karl G. Boyd was
submitted to the witness for reading and signing;
that after he had stated to the undersigned Notary
Public that he had read and examined his deposition,
he signed the same in my presence on the _____ day
of _____, 2008.

Notary Public

My commission expires _____, _____.

- - -

CERTIFICATE

State of Ohio :
County of Franklin : SS:

I, Maria DiPaolo Jones, Notary Public in and for the State of Ohio, duly commissioned and qualified, certify that the within named Karl G. Boyd was by me duly sworn to testify to the whole truth in the cause aforesaid; that the testimony was taken down by me in stenotypy in the presence of said witness, afterwards transcribed upon a computer; that the foregoing is a true and correct transcript of the testimony given by said witness taken at the time and place in the foregoing caption specified and completed without adjournment.

I certify that I am not a relative, employee, or attorney of any of the parties hereto, or of any attorney or counsel employed by the parties, or financially interested in the action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Columbus, Ohio, on this 29th day of October, 2008.

Maria DiPaolo Jones
Maria DiPaolo Jones, Registered
Diplomate Reporter, CRR and
Notary Public in and for the
State of Ohio.

My commission expires June 19, 2011.

(MDJ-3283B)

- - -

FILE

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

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In the Matter of the Application of)
Columbus Southern Power Company for) Case No. 08-917-EL-SSO
Approval of its Electric Security Plan; an)
Amendment to its Corporate Separation)
Plan; and the Sale or Transfer of Certain)
Generation Assets.)

In the Matter of the Application of Ohio)
Power Company for Approval of its) Case No. 08-918-EL-SSO
Electric Security Plan; and an Amendment)
to its Corporate Separation Plan.)

**NOTICE TO TAKE DEPOSITIONS UPON ORAL EXAMINATION
AND REQUEST FOR PRODUCTION OF DOCUMENTS**

Pursuant to Ohio Adm. Code Rule 4901-1-21(B), please take notice that the Ohio
Consumers' Counsel ("OCC") will take the oral deposition of the following individuals:

- 1) J. Craig Baker, Senior Vice President - Regulatory Services, American Electric Service Power Corporation ("AEPSC"), 1 Riverside Plaza, Columbus, Ohio 43215;
- 2) Gregory A. Earle, Customer Services & Marketing Manager, AEPSC, Columbus Region of AEP Ohio, 850 Tech Center Drive, Gahanna, Ohio 43230;
- 3) Dr. Anil Kumar Makhija, Professor of Finance - The Ohio State University, 700 E. Fisher Hall, Fisher College of Business, The Ohio State University, Columbus, Ohio 43210;
- 4) Leonard V. Assante, Vice President of Regulatory Accounting Services, AEPSC, 1 Riverside Plaza, Columbus, Ohio 43215;
- 5) Karen L. Sloneker, Director of Customer Services and Marketing, AEPSC, 850 Tech Center Drive, Gahanna, Ohio 43230;

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