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FILE

Date of Hearing: 11/26/08

Case No. 08-917-EL-SSO / 08-918-EL-SSO

PUCO Case Caption: In the Matter of
Columbus Southern Power Company
this Power Company

List of exhibits being filed:

Volume VIII
OCC Ex. 9A

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Reporter's Signature: Yvonne DiPaolo Jones
Date Submitted: 12/9/08

FILE

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. :

PUCO

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DIRECTOR'S OFFICE

PROCEEDINGS

before Ms. Kimberly W. Bojko and Ms. Greta See,
 Hearing Examiners, at the Public Utilities Commission
 of Ohio, 180 East Broad Street, Room 11-C, Columbus,
 Ohio, called at 9:00 a.m. on Wednesday, November 26,
 2008.

12/11/08 Transcript docketed electronically

VOLUME VIII

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**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

REQUEST FOR PRODUCTION OF DOCUMENTS 3-10.

Please provide a copy of the established vegetation management plans for CSP and OP that are required pursuant to Electric Service and Safety Standards ESSS Rule 4901:1-10-27 (provide copies of all plans if such plans have changed from 2003 to 2007).

RESPONSE:

AEP Ohio objects to providing the requested information. This request is vague and is unduly burdensome both temporally and topically. Without waiving this objection, the requested information is contained in the Company's ESSS Rule 27 submissions provided to the PUCO.

Prepared by: K.G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUEST NO. 3-34.

What are the annual target values and the actual performance values for CSP and OP for the following reliability indices for the past four years; i.e. from 2004 through 2007:

- a. Customer Average Interruption Duration Index ("CAIDI")?
- b. System Average Interruption Duration Index ("SAIDI")?
- c. System Average Interruption Frequency Index ("SAIFI")?
- d. Average System Availability Index ("ASAI")?
- e. Momentary Average Interruption Index ("MAIFI")?
- f. Other reliability indices used by the Company?

RESPONSE:

- a. Customer Average Interruption Duration Index ("CAIDI")?

Year	CSP		OP	
	Target	Actual	Target	Actual
2004	161.2	116.8	215.6	144.4
2005	161.20	130.69	215.60	146.73
2006	161.20	113.83	215.60	137.63
2007	161.20	118.62	215.60	131.29

- b. System Average Interruption Duration Index ("SAIDI")?

Year	CSP		OP	
	Target	Actual	Target	Actual
2004	163.5	217.4	218.6	209.5
2005	163.50	247.59	218.60	221.71
2006	163.50	166.79	218.60	194.74
2007	163.50	198.02	218.60	174.73

- c. System Average Interruption Frequency Index ("SAIFI")?

Year	CSP		OP	
	Target	Actual	Target	Actual
2004	1.291	1.861	1.019	1.451
2005	1.29	1.89	1.02	1.51
2006	1.29	1.47	1.02	1.41
2007	1.29	1.67	1.02	1.33

RESPONSE TO INTERROGATORY REQUEST NO. 3-34 CONTINUED

d. Average System Availability Index ("ASAI")?

Year	CSP		OP	
	Target	Actual	Target	Actual
2004	0.99969	0.99959	0.99958	0.99960
2005	0.99969	0.99953	0.99958	0.99958
2006	0.99969	0.99968	0.99958	0.99963
2007	0.99969	0.99962	0.99958	0.99967

e. There are no annual target values recorded and reported for CSP and OP.

f. There are no other reliability indices with target values used by the Company.

Prepared by: K. G. Boyd

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THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-35.

What are the outage causes and the number of outages for each outage cause category for distribution station outages, by year from 2004 through 2007 for:

- a. CSP?
- b. OP?

RESPONSE:

The Companies object to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, the Companies state the following.

The Companies' outage recording system is distribution circuit based. The count of outage records is a measure of the number of circuits and their associated customers that were interrupted due to problems inside the distribution station. Distribution stations usually serve multiple distribution circuits so multiple outage records are created for each case of distribution station caused interruptions. Percentage increase calculations from the record count should relatively represent the increase in actual station outages.

The number of outage records reported for 2004 through 2007, that were associated with the Companies' distribution station outages, is listed below by outage cause.

RESPONSE TO INTERROGATORY REQUEST NO. 3-35 CONTINUED

Distribution Station Outage Record Count by Cause				
excluding major events				
Outage Cause	2004	2005	2006	2007
Animal	82	56	82	35
Arrester/Insulator	14	13	15	22
Bus	0	5	0	0
Cable	2	0	0	0
Capacitor	4	7	1	2
Circuit Breaker	37	30	5	11
Conductor	0	1	4	9
Contamination	0	3	2	0
Control Equipment	2	4	4	5
Fire	0	0	4	0
Jumper/Riser	1	1	0	3
Operating Incidents	41	17	9	18
Other	0	5	9	4
Outside	3	0	3	2
Planned	4	17	16	22
Regulator	10	10	18	21
Relay	24	42	20	12
Station Service	4	1	0	0
Switch	13	16	9	25
Transformer	9	37	7	9
Tree	3	0	0	0
Unknown	13	3	2	0
Vandalism	0	0	0	6
Weather	3	11	8	1

Prepared by: K. G. Boyd and Counsel

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INTERROGATORY REQUEST NO. 3-36

Using the 2006 IEEE Electric Utility Reliability Survey or other industry study of the Company's choosing, for CAIDI, SAIDI, and SAIFI, in which Quartile of performance does CSP and OP fall as of December for 2004, 2005, 2006 and 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The Companies believe that the IEEE survey's raw results, while useful for some purposes, are not indicative of comparative performance among the surveyed companies. The IEEE survey is based on a different method of identifying major events than that used by the Companies in their PUCO reports. Calculating reliability indices for the Companies using the IEEE survey method indicates quartile performance as:

	Year	CAIDI	SAIDI	SAIFI
CSP	2004	Q3	Q4	Q4
	2005	Q3	Q4	Q4
	2006	Q3	Q3	Q3
	2007	Q3	Q4	Q3
OP	2004	Q4	Q4	Q3
	2005	Q4	Q4	Q3
	2006	Q4	Q4	Q3
	2007	Q4	Q4	Q3

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-37.

How has AEP Ohio's distribution system been improved to withstand more adverse weather conditions, from a qualitative and quantitative perspective, since CSP's last rate case was filed?

RESPONSE:

CSP's last rate case was Case No. 91-418-EL-AIR. Answering this question would be unduly burdensome and, therefore, the Companies object to answering this question. As a further basis for objection, the scope of the question is so broad that the information sought is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving these objections, the Companies provide the following information.

There are any number of activities that result in the system's ability to better withstand adverse weather conditions. As described in Witness Boyd's Direct Testimony beginning on page 5, the major activities include rights-of-way clearing, inspection and repair/replacement work, sectionalizing, and lightning mitigation.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-38.

How has AEP Ohio's distribution system been improved to withstand more adverse weather conditions, from a qualitative and quantitative perspective, since OP's last rate case was filed?

RESPONSE:

OP's last rate case was Case No. 94-996-EL-AIR. Answering this question would be unduly burdensome and, therefore, the Companies object to answering this question. As a further basis for objection, the scope of the question is so broad that the information sought is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving these objections, the Companies provide the following information.

There are any number of activities that result in the system's ability to better withstand adverse weather conditions. As described in Witness Boyd's Direct Testimony beginning on page 5, the major activities include rights-of-way clearing, inspection and repair/replacement work, sectionalizing, and lightning mitigation.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-39.

What are the criteria used by the Company to exclude outage minutes associated with each of the outage causes for Distribution Line Equipment, Vehicle Accidents, Distribution Station, Dig-Ins, and Flood/Slides for each category and by year for 2004 through 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

For ESSS Rule 10 reporting, the only exclusions are major events.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-40.

What criteria are utilized by the Company in designating a weather event or storm as "major" and, therefore, excludable for purposes of reporting SAIDI, CAIDI, or SAIFI performance?

RESPONSE:

The criteria used for declaring outages part of a weather event of storm as "major" for reliability analysis and reporting are:

- 1) Restoration efforts exceed 24 hours.
- 2) Assistance from outside the District is requested.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-42.

If the criteria used to define a major weather event has been changed or modified from the year 2000 to the present, how has it been changed and what has been the quantitative impact on the Company's reliability measures, by year, for the period 2000 through 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

Please refer to the Companies' response to OCC 3-41. The quantitative impact on the Companies' reliability measures is not determinable.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-43.

What were the customer outage minutes that were excluded from the SAIDI calculations for CSP and OP in 2004, 2005, 2006, and 2007 as a result of the designation of a weather event as being a "major" storm per Ohio Adm. Code 4901:1-10-08(B)(12) and 4901:1-10-09(C)(2)?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The table below shows the annual excluded customer outage minutes as determined from the Companies' ESSS Rule 10 filings.

Year	CSP	OPCO
2004	1,110,731,256	549,311,022
2005	37,317,272	333,324,839
2006	53,158,089	268,421,274
2007	6,456,439	38,983,053

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUEST NO. 3-44.

What were the non-major storm outage minutes, for each year 2004 through 2007, that were excluded from CSP's and OP's SAIDI, CAIDI, and SAIFI calculations?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

No non-major storm outage minutes were excluded from CSP's and OP's SAIDI, CAIDI, and SAIFI calculations.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-45.

For the years 2004 through 2007, what was the number of outage minutes, by circuit, for each of the circuits listed in CSP's and OP's submittals to the PUCO as required by ESSS Rule 4901:1-10-11 ("Rule 11") for the lowest performing eight percent of the Company's distribution circuits, without making any exclusions or adjustments?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The customer-minutes interrupted without exclusions for each circuit are included in the attached file "OCC 3-45.xls".

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUEST NO. 3-46.

Regarding service quality commitments (qualitative and quantitative) made to communities located in CSP's and OP's service territory in 2004, 2005, 2006, 2007, and 2008 to address community reliability concerns:

- a. What is the identity of each community?
- b. What is the status regarding meeting the commitments in each instance?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

See the list below for the service quality commitments made to communities located in CSP's and OP's service territory in 2007 to the present and their status.

Chillicothe: We have completed and have on line a new station (Rozelle Station) that serves areas in and around Chillicothe – completed in 2007.

Delroy: Line work is underway to move a distribution voltage line from a field to along the county road. Easements are being secured and the work should begin yet this year.

Dublin: In 2006, approximately \$4.3 million in upgrades to Sawmill Station were completed along with 14 miles of cable revitalization. The underground cable work was to continue through 2009. Additional commitments in June 2008 include investing an additional \$8.8 million to complete this work, adopt a more aggressive work schedule, dedicate seven more crews to the project for a total of nine crews, replace approximately 10 miles of mainline cable, replace 6 miles of URD cable, replace 2 miles of feeder exit cable, rejuvenate 35 additional miles of cable, replace approximately 90 transformers and replace five switchgear units. All work is projected to be completed by mid-2009.

Ottawa: Construct new 12kV East Ottawa Station and two 12kV circuits. Relieve flood issues at Ottawa Station. Will be completed in 2008.

Van Wert: Completed tree trimming of all the breaker zones in the City of Van Wert in addition to a complete end-to-end tree trimming of three 4kV circuits in 2008.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
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THIRD SET
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INTERROGATORY REQUEST NO. 3-47.

What are the criteria the Companies' uses to determine if animal mitigation devices need to be installed on a circuit?

RESPONSE:

The lowest performing circuit outage mitigation guidelines call for prioritizing the installation of animal mitigation for all primary equipment within animal habitat areas of the breaker zone. In addition, the Companies install animal mitigation on bushings of new primary equipment.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
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THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-48.

How many circuits were upgraded and what were the total expenditures for CSP and OP for animal mitigation devices, by year, for 2004 through 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The Company does not maintain records on how many circuits received animal mitigation devices nor the associated costs of these installations. However, the Company installed approximately the following number of animal mitigation devices from 2004 to 2007:

2004 – 29,000
2005 – 12,000
2006 – 7,200
2007 – 8,300

Prepared by: K. G. Boyd and Counsel

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THIRD SET
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INTERROGATORY REQUEST NO. 3-49.

**What changes (qualitative and qualitative) have been made to the Company's
vegetation management plans for 2000 through 2007?**

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

Throughout this period, AEP Ohio's vegetation plans balanced cycle-based trimming and performance-based trimming. During this time, there has been a shift in emphasis from cycle-based trimming to performance-based trimming.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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THIRD SET
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INTERROGATORY REQUEST NO. 3-51.

For each of the last 10 years, how much has vegetation growth exceeded expected growth rates or patterns based on annual rainfall and what has been the resulting effect on the vegetation management activities for CSP and OP?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The Company is unable to perform the requested analysis.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
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CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-52.

How many outages have been caused, for 2004 through 2007, by trees in the right of way for CSP and OP?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

Distribution Tree In ROW Outages <i>Primary Only Outages</i> <i>Excludes Major Events</i>		
Year	CSP	OP
2004	453	1,139
2005	433	1,308
2006	544	1,074
2007	529	1,035

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-53.

How many of the outages caused, for 2004 through 2007, by trees in the right of way involved trees that were inspected and trimmed in accordance with the Company's vegetation management plans approved by the PUCO?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The Company is unable to perform the requested analysis.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUEST NO. 3-54.

Broken down by month and company, how many residential customers contacted CSP and OP because of momentary interruptions or because the customer was out of service for the years 2004 through 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

See attachment OCC INT 3-54.xls for an approximation of residential outage calls by month from 2004 through 2007. The Companies are unable to provide these data separated by CSP and OP; therefore, they are provided for AEP Ohio. In addition, these totals represent an approximate number of customer contacts regarding outages and cannot be separated by calls regarding momentary outages or sustained outages.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-61.

What are the identities, job titles and responsibilities, for CSP and OP's engineering positions which focus on distribution reliability matters?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. In addition, it would be unduly burdensome to comply with such a request since it is voluminous in nature.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-66.

What method/process is used by the Company for gathering and recording information about interruptions shorter than five minutes in duration, and how has this process changed during the period 2000 to the present?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

On those circuit breakers with Supervisory Control and Data Acquisition (SCADA) capabilities, the Companies are able to gather and record all operations of the breaker. This process has not changed since 2000.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-67.

What method/process is used by the Company to determine its least reliable distribution circuits from a reliability viewpoint, and how has this process changed during the period 2000 to the present?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

A combination of the SAIFI and CAIDI indices is used for identifying and prioritizing circuits. A per unit value is calculated for each index based on a nominal index value. The per unit SAIFI (SAIFI/2) and per unit CAIDI (CAIDI/240) values for each circuit are then averaged. These average per unit SAIFI + CAIDI values are then listed in order of descending priority to rank the circuits by performance. This process has not changed since 2000.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-68.

For each of the years 2000 to the present, what were both the budgeted and actual annual expenditures, by FERC account number for CSP and OP, for transmission maintenance expenses, distribution maintenance expenses, transmission operation expenses, distribution operation expenses, transmission capital investments, and distribution capital investments?

RESPONSE:

Since this case is not a cost-based filing and since the interrogatory is requesting data back to 2000, the Companies object because the request seeks information which is neither relevant nor likely to lead to discovery of admissible evidence. Without waiving this objection the Companies provide the following information. The actual annual expenditures, by FERC account number for CSP and OP, for each of the years 2000 to the present, can be found in the respective Company's FERC Form No. 1 on pages 320 through 323 in the Electric Operation and Maintenance Expense schedule and pages 206-207 in the Electric Plant in Service schedule, which can be accessed on the Federal Energy Regulatory Commission (FERC) website.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-72.

Regarding distribution pole-top and pad-mount transformers, how many such transformers have failed while in service for CSP and OP during each year from 2000 through 2007 and what were the causes of each failure?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The Companies record the number of outage records due to transformer failure, but do not record the root cause of the transformer failure.

Distribution Transformer Outages <i>(Excludes Major Events)</i>				
Company:	CSP		OP	
Year	Pole Type	Padmount	Pole Type	Padmount
2000	204	65	337	28
2001	228	37	332	29
2002	146	40	338	14
2003	398	89	517	31
2004	492	119	563	29
2005	614	147	807	38
2006	590	124	718	44
2007	744	148	840	40

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
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THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-73.

What is the total number of poles for the Company's distribution system and how many of these poles have been inspected in each year from 2004 through 2007?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

The table below provides the total number of wood poles by company, as well as the number of inspections completed for each year from 2004 through 2007.

Wood Pole Inspections 2004-2007 by Company			
	CSP	OPCO	Total
Total Wood Poles	326,891	639,977	966,868
Wood Pole Inspections by Year			
2004	21,036	54,830	75,866
2005	13,612	48,933	62,545
2006	18,696	41,038	59,734
2007	8,222	22,333	30,555
Total Inspections	61,566	167,134	228,700

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
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THIRD SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3-83.

Referring to Senate Bill 221, section 4928.02 (A):

- a. How does the Company define "adequate and reliable service?"
- b. What measurements and standards are used to determine what constitutes adequate and reliable service?
- c. What is an acceptable margin of error when it comes to outages and/or momentary power surges?
- d. What contingency plans, if any, does the Company have in place to handle extreme weather in Ohio?
- e. How can the Company plan ahead in order to restore winter-weather related outages more quickly? Does the company have plans to hire temporary/ seasonal workers to assist with this process? If so, how many temporary/seasonal workers does the Company anticipate it will employ to respond and restore winter-weather related outages in a timely fashion?

RESPONSE:

AEP Ohio objects to providing the requested information because it is neither relevant nor likely to lead to the discovery of admissible evidence. Without waiving its objection, AEP Ohio states the following.

- a. AEP Ohio has not prepared a definition of "adequate and reliable service."
- b. Measurements and standards do not determine what constitutes adequate and reliable service. Reliability indices, customer satisfaction data, and customer complaint levels can be indicators of adequate and reliable service.
- c. AEP Ohio has not determined a statistical margin of error regarding outages and/or momentary power surges.
- d. To respond to the effects of extreme weather in Ohio, the Companies follow their Distribution System Service Restoration Plan (refer to OCC INT 3-83, Attachment 1)
- e. See the Companies' response to (d) above.

Prepared by: K. G. Boyd and Counsel

**AEP OHIO'S RESPONSE TO
COMMISSION STAFF'S
INFORMAL REQUEST NO. 4
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 4-1

Please provide:

- a. The average O&M cost per mile associated with the Companies' current ESSS Rule 27 (D)(1) Distribution Inspection Program in 2007;
- b. The average Capital cost per mile associated with the Companies' current ESSS Rule 27 (D)(1) Distribution Inspection Program (including resulting replacements) in 2007;
- c. The projected average O&M cost per mile associated with the Companies' Enhanced Overhead Inspection and Mitigation Initiative over the three-year period 2009-2011; and
- d. The projected average Capital cost per mile associated with the Companies' Enhanced Overhead Inspection and Mitigation Initiative over the three-year period 2009-2011.

RESPONSE:

- a. See the Companies' response to Staff's Set 3, question 3-25 for the total average cost per mile. The table below shows the average O&M and the average Capital cost per mile for the distribution inspection program for 2007.

Average Cost per Mile		
	CSP	OP
O&M	\$ 136	\$ 64
Capital	\$ 162	\$ 59

- b. See the above table.
- c. The projected average O&M cost per mile for the Enhanced Overhead Inspection and Mitigation Initiative (which besides the comprehensive inspection and repair includes replacement of targeted cutouts, arresters, reclosers, 35kv protection upgrades, and addition of fault indicators) for the approximately 15,000 miles that will be completed over the three-year period 2009-2011 is estimated to be \$4,900 per mile. See the Companies' response to Staff's Set 3, question 3-27.
- d. The projected average Capital cost per mile for the Enhanced Overhead Inspection and Mitigation Initiative (which besides the comprehensive inspection and repair includes replacement of targeted cutouts, arresters, reclosers, 35kv protection upgrades, and addition of fault indicators) for the approximately 15,000 miles that will be completed over the three-year period 2009-2011 is estimated to be \$8,800 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
COMMISSION STAFF'S
INFORMAL REQUEST NO. 4
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 4-2

With respect to the Companies' response to Staff Data Request No. 3, Item 83, please itemize the estimated system reliability improvement (on SAIFI and CAIDI) that is attributable to each of the following:

- a. The Enhanced Overhead Inspection and Mitigation Initiative;
- b. The Enhanced Vegetation Management Initiative;
- c. The Enhanced Cable Initiative;
- d. The Distribution Automation Initiative; and
- e. The gridSMART Phase 1 Initiative;

RESPONSE:

- a. The 2005 through 2007 average SAIFI and CAIDI for CSP are 1.68 and 121.0 and for OP they are 1.42 and 138.6, respectively. Assuming all other things remain equal from the 2005 through 2007 averages, which they will not (see Karl Boyd's Direct Testimony at page 8 through 10), the estimated improvement associated with the Enhanced Overhead Inspection and Mitigation Initiative for SAIFI and CAIDI in 2012 would be to 1.56 and 122.6 for CSP and to 1.26 and 132.5 for OP. The above indices do not include impacts of major events. Therefore, these indices do not reflect the improvement associated with reduced outages during major events.
- b. The 2005 through 2007 average SAIFI and CAIDI for CSP are 1.68 and 121.0 and for OP they are 1.42 and 138.6, respectively. Assuming all other things remain equal from the 2005 through 2007 averages, which they will not (see Karl Boyd's Direct Testimony at page 8 through 10), the estimated improvement associated with the Enhanced Vegetation Management Initiative for SAIFI and CAIDI in 2012 would be to 1.62 and 120.2 for CSP and to 1.34 and 139.6 for OP. The above indices do not include impacts of major events. Therefore, these indices do not reflect the improvement associated with reduced outages during major events.
- c. The Enhanced Cable Initiative has a very nominal impact on SAIFI and CAIDI across the entire system and is therefore not reflected in the estimated system reliability improvements provided. For the customers directly affected by this work their reliability will be significantly improved.
- d. Since the additional twenty circuits for the Distribution Automation Initiative (outside gridSMART phase 1) have not been finalized, the benefits for these additional circuits are not included in the reliability improvements provided and cannot be estimated at this time. However, it is expected that the customers served from these circuits will see significant reductions in outage minutes.

INTERROGATORY REQUEST NO. 4-2 CONTINUED

- e. The 2005 through 2007 average SAIFI and CAIDI for CSP are 1.68 and 121.0 and for OP they are 1.42 and 138.6, respectively. Assuming all other things remain equal from the 2005 through 2007 averages, which they will not (see Karl Boyd's Direct Testimony at page 8 through 10), the estimated improvement associated with the gridSMART Phase 1 Initiative for SAIFI and CAIDI in 2012 would be to 1.66 and 116.8 for CSP. The gridSMART Phase I initiative is not located in OP territory and therefore has zero impact for OP. The above indices do not include impacts of major events. Therefore, these indices do not reflect the improvement associated with reduced outages during major events.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-234

Relative to AEP's proposed Enhanced Service Reliability Plan ("ESRP"), how does the ESRP address the following:

- a. Any cost savings to AEP;
- b. Avoiding duplicative cost recovery;
- c. Alignment of AEP and customer interests?

RESPONSE:

- a. The Companies have not quantified any cost savings that will result from the ESRP in 2009 through 2011. Cost reductions that occur would be reflected in a future distribution rate case's test year data.
- b. The costs associated with the programs included in the Plan are incremental to the costs associated with the Companies' current programs. Since the incremental costs will be recovered through a specific percentage increase to current distribution rates, there will be no duplicative cost recovery.
- c. The Companies' response to OCC INT 7-235.

Prepared by: K. G. Boyd and D. M. Roush

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-235

Did the Company utilize customer survey(s) to evaluate the alignment of company interests with customer interests?

RESPONSE:

Yes. Karl G. Boyd's Direct Testimony at page 13 discusses customer survey results showing an increase in our customers' future expectations with regard to reliability. This, coupled with the challenges to meet those expectations, has led to the proposed Plan. Therefore, the Plan does align the interests of the Companies and their customers.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-236

Relative to AEP's Plan to modernize its infrastructure, i.e. the ESRP:

- a. What portion(s) of service territory are affected;
- b. What percentage pf customers are directly impacted;
- c. What is the implementation schedule by geographical location and/or type of activity?

RESPONSE:

- a. The programs included in the Companies' Enhanced Service Reliability Plan (Plan) will extend beyond the three-year period of the Electric Security Plan (ESP) with the intent to cover the entire service territory.
- b. The Companies' Plan will directly impact 100% of their customers.
- c. The implementation schedule is not based on geographic location or type of activity. The implementation schedule for the Plan will take into consideration such criteria as circuit performance, customer impact, and work plan efficiencies.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-237

What is the projected impact that the ESRP will have on:

- a. The Company's overall reliability;
- b. SAIDI for both OP and CSP;
- c. SAIFI for both OP and CSP;
- d. CAIDI for both OP and CSP?

RESPONSE:

- a. The Companies' overall reliability, including the number of outages, the number of customers affected, the number of customer-minutes of interruption, and the number of momentary interruptions will improve.
- b. As calculated from the indices included in the Companies' response to Staff INT 3-83 and assuming all other things remain equal from the 2005 through 2007 averages, the estimated improvement associated with the Plan for SAIDI in 2012 would be to 168.2 for CSP and 158.4 for OP.
- c. See the Companies' response to Staff INT 3-83.
- d. See the Companies' response to Staff INT 3-83.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
THE OFFICE OF THE OHIO CONSUMER COUNSEL
INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-238

For each program identified in the Company's ESRP:

- a. How many circuits are impacted;
- b. How many customers are impacted;
- c. What are the measurable outcomes that will be used to evaluate the programs?

RESPONSE:

- a. See the Companies' response to OCC INT 7-236 (a). For the Vegetation Management program and the Enhanced Overhead Line Inspection and Mitigation Initiative, all of the Companies' circuits, excluding network circuits, will be impacted. The number of circuits impacted by the Distribution Automation Initiative will be approximately 36 circuits over a five-year period. The number of circuits impacted by the Enhanced Cable Initiative has not been determined.
- b. For the Vegetation Management program and the Enhanced Overhead Line Inspection and Mitigation Initiative, approximately 1.4 million of the Companies' customers, will be impacted. The number of customers impacted by the Distribution Automation Initiative will be approximately 43,200. The number of customers impacted by the Enhanced Cable Initiative has not been determined.
- c. The measurable outcomes used to evaluate the programs will be based on a combination of the following: outage events and customer-minutes of interruption; customer complaints; and customer satisfaction levels.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSE TO
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INTERROGATORY REQUESTS
SEVENTH SET
CASE NO. 08-917-EL-SSO & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 7-239

How does AEP's Plan (ESRP) align customer and the Company's reliability and power quality expectations by customer class?

RESPONSE:

The Companies' residential and commercial customer surveys, as well as direct contacts with industrial customers, indicate an increasing expectation with regard to service reliability. The Companies' Plan includes components that will benefit all customer classes, which benefits include reductions in sustained and momentary interruptions, as well as reduced outage minutes.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
DISCOVERY REQUEST
THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 1

Please describe the extent to which the Companies or their parent have pursued damages or compensation from the manufacturer/vendor of the brand of fuse cut-outs that have experienced premature failure, and discuss how such damages or compensation would impact the cost of related portions of the Enhanced Overhead Inspections and Mitigation Initiative.

RESPONSE:

In 2005 the Companies received monetary compensation and a discounted price for some replacement cutouts. The monetary compensation was allocated to the individual Operating Companies based upon the number of cutout failure outages in years 2003-4 and credited to O&M expense in 2005. The discounted price reduced material costs for some of the cutout replacements completed by the Companies in 2005 and 2006. Therefore, the compensation and discounted material costs do not impact the costs of the Enhanced Overhead Inspections and Mitigation Initiative.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 2

Please describe what action AEP Ohio would take in the event that the actual cost of the Enhanced Overhead Inspection and Mitigation Initiative exceeded the projected costs for that Initiative over the three-year period.

RESPONSE

AEP Ohio does not anticipate that experiencing higher actual costs, than currently projected, will cause a material alteration of the plans. The action that AEP Ohio might take if actual costs are higher than currently projected costs will depend upon factors such as, the amount of the difference, the time during the three-year period that the projected costs are exceeded, and the actual versus projected cost differences of the other components of the Enhanced Service Reliability Plan. AEP Ohio would still plan to cover 100% of the distribution system over a five-year period.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
DISCOVERY REQUEST
THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 3

Please describe how AEP Ohio would decide the order in which circuits would be addressed in the Enhanced Overhead Inspection and Mitigation Initiative.

RESPONSE:

AEP Ohio will be working multiple circuits simultaneously across the service areas of both Companies. The method to select the order for scheduling the circuits will take into consideration such things as circuit performance, customer experience, date of last inspection, and workforce planning efficiencies.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 4

Please indicate how soon after their discovery would AEP Ohio correct the deficiencies identified in the Enhanced Overhead Inspection and Mitigation Initiative.

RESPONSE:

It will vary depending mostly on the nature of the deficiencies. In many cases, they would be corrected immediately by the crew that identifies the deficiency. In some cases, resources and materials will need to be scheduled. It is likely that the majority of the deficiencies would be corrected in four months or less.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
DISCOVERY REQUEST
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INTERROGATORY REQUEST NO. 5

How will the deficiencies discovered through the Enhanced Inspection Program be prioritized for repair and/or replacement?

RESPONSE:

See the Companies response to 3-4. In addition, if necessary, correction efforts will be prioritized based on customer impact.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 6

How will these deficiencies be tracked from discovery to remediation?

RESPONSE:

The primary method will be to use the work management system.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 7

How many fault indicators will be installed and how many circuits will be directly affected by this portion of the Enhanced Overhead Inspection and Mitigation Initiative?

RESPONSE:

It is estimated that the Companies will install approximately 3,000 fault indicators on approximately 700 circuits over a three-year period.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
DISCOVERY REQUEST
THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 8

What is the estimated impact on system SAIFI and CAIDI once the Enhanced Overhead Inspections and Mitigation Initiative has been fully implemented?

RESPONSE:

As indicated in Karl Boyd's Direct Testimony on page 24, the Companies are forecasting a 40% reduction in distribution primary equipment related sustained outages. The improvements that customers will experience will be from the avoided sustained and momentary outages and will occur as soon as their circuit is completed. It is estimated that the overall impact on system SAIFI will be 10% for CSP and 9% for OP as compared to 2007 performance. These reductions should be fully realized at the end of year 6 of the 5-year program, and assumes everything else remains constant, which it will not. The reduction in CAIDI due just to this program will be small and is difficult to predict.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SS0**

INTERROGATORY REQUEST NO. 9

Describe the extent to which the Enhanced Overhead Inspection and Mitigation Initiative will go beyond the correction of actual deficiencies to proactively repair hardware and equipment that is considered likely to fail within the next few years.

RESPONSE:

As discussed on pages 18 and 19 of Karl Boyd's Direct Testimony, it is expected the Enhanced Overhead Inspection and Mitigation Initiative will identify more distribution hardware and equipment at the beginning stages of failure, which would not be identifiable with the current inspection program.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 10

With respect to the Enhanced Overhead Inspection and Mitigation Initiative, compare and contrast the criteria AEP Ohio would be used to identify needed replacements for the five targeted overhead asset initiatives vs. the criteria used to identify replacements outside the scope of the five targeted asset initiatives.

RESPONSE:

The same criteria to identify needed replacements for the five targeted overhead asset initiatives would be used for both the targeted overhead asset initiatives and those outside the scope of the five targeted asset initiatives. However, it is expected the Enhanced Overhead Inspection and Mitigation Initiative will identify more distribution hardware and equipment at the beginning stages of failure which would not be identifiable with the current inspection program. The enhanced initiative will consist of a comprehensive inspection of the hardware and equipment on each structure, including the use of various technologies, (such as infrared inspections and electro-magnetic interference detection devices). The current inspection program provides a basic visual assessment of the general condition of distribution facilities.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 11

In 1994, after Columbus Southern Power and Ohio Power functionally combined their Transmission and Distribution Systems, please provide a description of the Company's practices for inspecting its distribution circuits, facilities, and lines was at that time. Provide the percentage of distribution circuit line miles that were inspected annually in 1994 utilizing each of the following methods: walking, climbing, drive-by, bucket truck, aerial via helicopter, aerial via airplane, by method.

RESPONSE:

Most of the miles were likely inspected by walking or driving. There are no records to verify the percentage of miles inspected by the methods listed.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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THIRD REQUEST
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INTERROGATORY REQUEST NO. 12

Please provide a description of the Company's practices for inspecting its distribution circuits, facilities, and lines that was in place in 2000. Provide the percentage of distribution circuit line miles that were inspected annually in 2000 utilizing each of the following methods: walking, climbing, drive-by, bucket truck, aerial via helicopter, aerial via airplane, by method.

RESPONSE:

Most of the miles were likely inspected by walking or driving. There are no records to verify the percentage of miles inspected by the methods listed.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 13

Please provide a description of the Company's practices for inspecting its distribution circuits, facilities, and lines that was in place in 2007. Provide the percentage of distribution circuit line miles that were inspected annually in 2007 utilizing each of the following methods: walking, climbing, drive-by, bucket truck, aerial via helicopter, aerial via airplane, by method.

RESPONSE:

Most of the miles were likely inspected by walking or driving. There are no records to verify the percentage of miles inspected by the methods listed.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 14

Does the Company consider the Enhanced Overhead Inspection and Mitigation Initiative prescriptive in nature?

RESPONSE:

The Enhanced Overhead Inspection and Mitigation Initiative prescribes a comprehensive inspection of the overhead hardware and equipment on each structure as well as five targeted overhead asset initiatives. The Plan lays out major components of mitigation work that have been selected to address the top causes of momentary and sustained interruptions on the AEP Ohio distribution system.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SS0**

INTERROGATORY REQUEST NO. 15

Does the Company consider the Enhanced Overhead Inspection and Mitigation Initiative preventative in nature?

RESPONSE:

Yes. The Enhanced Overhead Inspection and Mitigation Initiative proactively addresses potential asset failures before they become a problem.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 16

Which of the following programs does the Company consider more effective? [the Company's current ESSS Rule 27(D)(1) Distribution Inspection Program or the Company's proposed Enhanced Overhead Inspection and Mitigation Initiative] Please provide rationale for the Company response.

RESPONSE:

The proposed Overhead Inspection and Mitigation Initiative will be more effective in enhancing reliability because the inspection is more comprehensive and includes the five targeted overhead asset initiatives.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 17

Back in 2000, if the Company would have implemented its proposed Enhanced Overhead Inspection and Mitigation Initiative instead of its current ESSS Rule 27(D)(1) Distribution Inspection Program, does the Company believe that its distribution systems would have been more reliable than it is today? If so, please provide a quantitative estimate of how much more reliable each operating company's distribution systems would have been. Please utilize the SAIFI and CAIDI Indices when formulating and presenting the Company's quantitative estimate.

RESPONSE:

AEP Ohio believes that if the Enhanced Overhead Inspection and Mitigation Initiative were implemented in 2000, it would have better reliability today. The Companies have not performed an analysis of how much more reliable the distribution systems would have been and do not believe that such an analysis would be meaningful because of the many variables involved.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 18

Did the Company complete the same mitigation (repair and replacement) work, as described and included on Page 20, lines 3 through 19 within Company Witness Karl G. Boyd's Direct Testimony filed in this case, when addressing circuit, facilities, and line deficiencies found as a result of completing the distribution plant inspections back in 1994? If not, please explain what mitigation work was performed at that time and to what degree. If the Company would have completed the same aforementioned mitigation work when addressing circuit, facilities, and line deficiencies found as a result of completing the distribution plant inspections back in 1994 and going forward, does the Company believe that its distribution systems would have been more reliable than it is today? If so, please provide a quantitative estimate of how much more reliable each operating company's distribution systems would have been. Please utilize the SAIFI and CAIDI Indices when formulating and presenting the Company's quantitative estimate.

RESPONSE:

In 1994, AEP Ohio used all of the mitigation work referenced on Page 20, lines 3 through 19, of Company Witness Karl G. Boyd's Direct Testimony. It is important to note that the enhanced initiative is a more comprehensive approach than traditionally taken. AEP Ohio believes that if the Enhanced Overhead Inspection and Mitigation Initiative had been implemented in 1994, it would have better reliability today. The Companies have not performed an analysis of how much more reliable the distribution systems would have been and do not believe that such an analysis would be meaningful because of the many variables involved.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 19

Did the Company complete the same mitigation (repair and replacement) work, as described and included on Page 20, lines 3 through 19 within Company Witness Karl G. Boyd's Direct Testimony filed in this case, when addressing circuit, facilities, and line deficiencies found as a result of completing the distribution plant inspections back in 2000? If not, please explain what mitigation work was performed at that time and to what degree. If the Company would have completed the same aforementioned mitigation work when addressing circuit, facilities, and line deficiencies found as a result of completing the distribution plant inspections back in 2000 and going forward, does the Company believe that its distribution systems would have been more reliable than it is today? If so, please provide a quantitative estimate of how much more reliable each operating company's distribution systems would have been. Please utilize the SAIFI and CAIDI Indices when formulating and presenting the Company's quantitative estimate.

RESPONSE:

In 2000, AEP Ohio used all of the mitigation work referenced on Page 20, lines 3 through 19, of Company Witness Karl G. Boyd's Direct Testimony. It is important to note that the enhanced initiative is a more comprehensive approach than traditionally taken. AEP Ohio believes that if the Enhanced Overhead Inspection and Mitigation Initiative had been implemented in 2000, it would have better reliability today. The Companies have not performed an analysis of how much more reliable the distribution systems would have been and do not believe that such an analysis would be meaningful because of the many variables involved.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 20

Did the Company complete the same mitigation (repair and replacement) work, as described and included on Page 20, lines 3 through 19 within Company Witness Karl G. Boyd's Direct Testimony filed in this case, when addressing circuit, facilities, and line deficiencies found as a result of completing the distribution plant inspections back in 2007? If not, please explain what mitigation work was performed at that time and to what degree.

RESPONSE:

In 2007, AEP Ohio used all of the mitigation work referenced on Page 20, lines 3 through 19, of Company Witness Karl G. Boyd's Direct Testimony. It is important to note that the enhanced initiative is a more comprehensive approach than traditionally taken.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 21

In what year did the Company begin to utilize infrared technology to inspect distribution plant?

RESPONSE:

The Companies began to use infrared technology on a limited basis to inspect distribution plant in 1987.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 22

Using a percentage basis, what is the Company's success rate in detecting distribution plant deficiencies [that have a potential to cause service interruptions] when utilizing infrared technology?

RESPONSE:

The infrared technology the Companies use detects equipment, conductor, and connections that may be operating at a higher temperature than expected. This condition may cause a service interruption if not corrected in time. This is one tool of many that can be utilized in the inspection process to identify potential equipment defects. Thermal infrared inspection results that reflect higher than expected temperatures typically identify a condition requiring correction. Determining a percentage basis of success is not possible because of fluctuations of loading in equipment, conductors, and connectors. Infrared inspection may occur one day showing no problems and later the equipment could fail due to thermal conditions, which are different than they were at the time the inspection was conducted.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 23

In what year did the Company begin to utilize electro-magnetic interference detection device technology to inspect distribution plant?

RESPONSE:

The Companies began to utilize electro-magnetic interference detection device technology to inspect distribution plant in 2005.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 24

Using a percentage basis, what is the Company's success rate in detecting distribution plant deficiencies [that have a potential to cause service interruptions] when utilizing electro-magnetic interference detection device technology?

RESPONSE:

The electro-magnetic interference detection technology the Companies use detects equipment that may fail. This condition may cause a service interruption if not corrected in time. This is one tool of many that can be utilized in the inspection process to identify potential equipment defects. Electro-magnetic interference detection results that reflect "noise" typically identify a condition requiring correction. Determining a percentage basis of success is not possible because of the many variables that impact the test results. Electro-magnetic interference detection inspection may occur one day showing no problems and later the equipment could fail due to environmental conditions, which are different than they were at the time the inspection was conducted.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 25

In actual dollars, what is the current average cost per mile to complete the Company's current ESSS Rule 27(D)(1) Distribution Inspection Program?

RESPONSE:

The cost of the overhead circuit inspection program in 2007 averaged \$192 per mile for the 5,534 miles inspected. Only repairs of a critical or safety-related nature were performed as part of this inspection program.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 26

In actual dollars, what is the projected average cost per mile to complete the inspections required by the Company's current ESSS Rule 27(D)(1) Distribution Inspection Program for the next three years, by year?

RESPONSE:

The projected average cost per mile will vary depending on the nature and the length of the circuits and the amount of repair required. A reasonable projection would be \$200 to \$225 per mile for each of the next three years.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 27

In actual dollars, what is the projected average O&M cost per mile to complete the Company's proposed inspections that are a part of its Enhanced Overhead Inspection and Mitigation Initiative for plan years 1, 2, and 3, by operating company, by year.

RESPONSE:

AEP Ohio does not have a projection for the "inspection only" portion of the program. The Companies plan to integrate the inspection and repair, whenever possible, and developed the cost estimate accordingly. The total overall average O&M cost per mile associated with the inspection and repair process is estimated to be \$4,900. This cost estimate would be the same for both operating companies over the three-year ESP period and does not include any Capital mitigation work associated with equipment repair and replacement.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 28

Please describe the extent to which the Companies or their parent have pursued damages or compensation from the manufacturer/vendor of the brand of porcelain lightning arresters that have experienced premature failure, and discuss how such damages or compensation would impact the cost of related portions of the Enhanced Overhead Inspections and Mitigation Initiative.

RESPONSE:

In 2006 AEP formed a team that examined the performance of porcelain lightning arresters. The team concluded that AEP is not experiencing abnormally high porcelain lightning arrester failures. Therefore, the Companies did not pursue damages or compensation.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 29

In actual dollars, what is the projected O&M cost per cutout replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The costs projected by the Companies are all Capital costs.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 30

In actual dollars, what is the projected Capital cost per cutout replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected Capital cost per cutout replacement is included below.

Q30	Capital Cost per Cutout Replacement		
	Year 1	Year 2	Year 3
CSP	\$200	\$210	\$220
OP	\$200	\$210	\$220

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 31

In actual dollars, what is the projected O&M cost per arrester replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The costs projected by the Companies are all Capital costs.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 32

In actual dollars, what is the projected Capital cost per arrester replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected Capital cost per arrester replacement is included below.

Q32	Capital Cost per Arrester Replacement		
	Year 1	Year 2	Year 3
CSP	\$50	\$53	\$56
OP	\$50	\$53	\$56

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 33

In actual dollars, what is the projected O&M cost per recloser replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected O&M cost per recloser replacement is included below.

Q33	O&M Cost per Recloser Replacement		
	Year 1	Year 2	Year 3
CSP	\$250	\$260	\$275
OP	\$250	\$260	\$275

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 34

In actual dollars, what is the projected Capital cost per recloser replacement for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected Capital cost per recloser replacement is included below.

Q34	Capital Cost per Recloser Replacement		
	Year 1	Year 2	Year 3
CSP	\$31,300	\$32,900	\$34,500
OP	\$34,000	\$35,700	\$37,500

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 35

In actual dollars, what is the projected O&M cost per circuit to enhance the protection of existing 34.5 kV circuits for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected O&M cost per circuit to enhance the protection of existing 34.5 kV circuits is included below.

Q35	O&M Cost per Ckt for 34.5KV enhancement		
	Year 1	Year 2	Year 3
CSP	\$68,000	\$71,400	\$75,000
OP	\$68,000	\$71,400	\$75,000

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 36

In actual dollars, what is the projected Capital cost per circuit to enhance the protection of existing 34.5 kV circuits for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

he projected Capital cost per circuit to enhance the protection of existing 34.5 kV circuits is included below.

Q36	Cap Cost per Ckt for 34.5KV enhancement		
	Year 1	Year 2	Year 3
CSP	\$780,000	\$820,000	\$860,000
OP	\$780,000	\$820,000	\$860,000

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 37

In actual dollars, what is the projected O&M cost per fault indicator installation for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The projected O&M cost per fault indicator installation is included below.

Q37	O&M Cost per Fault Indicator Installed		
	Year 1	Year 2	Year 3
CSP	\$858	\$901	\$946
OP	\$858	\$901	\$946

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 38

In actual dollars, what is the projected Capital cost per fault indicator installation for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The costs projected by the Companies are all O&M costs.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 39

Please describe the extent to which the Enhanced Overhead Line Inspection Initiative will include any mobile survey of overhead circuits utilizing GPS mapping and existing technology to automate the identification of identify the location of failing components.

RESPONSE:

The Companies do not plan to utilize GPS mobile survey in the Enhanced Overhead Line Inspection Initiative.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 40

Please clarify the extent to which the Enhanced Vegetation Management Initiative includes vegetation clearance on overhead secondary conductors.

RESPONSE:

The Enhanced Vegetation Management Initiative will apply the same clearance specifications as the current program, which is focused on avoiding primary faults. However, when clearing primary spans with secondary underbuild, clearance from the secondary will also be achieved. Secondary tree SAIFI makes up only 3% of total tree SAIFI (based on 2007 data).

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 41

Please describe what action would be taken in the event that the total cost of replacing facilities pursuant to the Enhanced Vegetation Management Initiative exceeded the total estimated costs for that Initiative.

RESPONSE:

AEP Ohio does not anticipate that experiencing higher actual costs, than currently projected, will cause a material alteration of the plans. The action that AEP Ohio might take if actual costs are higher than currently projected costs will depend upon factors such as, the amount of the difference, and the actual versus projected cost differences of the other components of the Enhanced Service Reliability Plan.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 42

Please describe how the Companies would decide the order in which circuits would be addressed in the Enhanced Vegetation Management Initiative.

RESPONSE:

AEP Ohio will be working multiple circuits simultaneously across the service areas of both Companies. The method to select the order for scheduling the circuits will take into consideration such things as circuit performance, customer experience, time since the circuit was last addressed and amount of work performed at that time, and workforce planning efficiencies.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO .43

Under the Enhanced Vegetation Management Initiative, will each circuit have a unique trimming cycle?

RESPONSE:

After the initial five-year treating of all circuits, under the Enhanced Vegetation Management Initiative circuits will be on a four-year inspection and trim cycle. However, certain circuit segments will be addressed in fewer than four years depending on vegetation growth data, which will be gathered by the use of improved technology.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 44

How many circuits will be trimmed from end to end during each year of the first three years of the Enhanced Vegetation Management Initiative?

RESPONSE:

The details have not been fully developed, but based on an aggressive ramp up plan and the expectation that some of the earlier year circuits will be longer and/or require more intense clearing, the following can be projected:

- Y1 - 200 circuits
- Y2 - 260 circuits
- Y3 - 310 circuits

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 45

What is the proposed upper limit for the tree trimming cycle (in terms of the number of years between end-to-end ROW clearance on a circuit) after the company has completed its inventory of tree species growth?

RESPONSE:

The plan is to achieve a four-year cycle so that all circuits are fully inspected and/or cleared at least once every four years.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 46

What are the potential cost savings and reliability benefits of the company's proposed Enhanced Vegetation Initiative over adopting a straight 4-year tree trimming cycle?

RESPONSE:

See the Companies' response to 3-43. To the extent that certain circuit segments would be addressed more frequently than every four years, customers will experience more reliable service with fewer momentary interruptions and outages. The Companies have not analyzed the additional cost as compared to the cost reductions associated with the more frequent segment work.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 47

What is AEP Ohio's vegetation work plan after the first three years of the Enhanced Vegetation Management Initiative?

RESPONSE:

The plan, with appropriate funding, is to continue at roughly the same pace until 100% of the system is complete, which is expected to take approximately five full years.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 48

Please provide an explanation as to whether or not the Company's proposed Enhanced Vegetation Management Initiative encompasses trimming and/or removing vegetation overhanging the Company's distribution circuits and/or danger/dead trees located outside the Company's right-of-ways. If so, explain to what extent. If not, separately provide both the projected incremental O&M cost per mile and the projected incremental Capital cost per mile to incorporate the trimming and/or the removal of both the vegetation overhanging the Company's distribution circuits and the danger/dead trees located outside the Company's right-of-ways for plan years 1, 2, and 3, by operating company, by year.

RESPONSE:

The Companies' plan is to continue to clear to the current specifications. According to the specifications, all overhang above three-phase primary lines is to be cut back. For single phase, "...all overhang is to be removed to a height above the primary for a 10' clear hinge or swing point..." There will likely continue to be some specific locations where exceptions to this specification must be made. Danger trees outside the right-of-way will continue to be removed where the property owner's permission can be secured.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 49

As described and included on Page 28, lines 19 through 20 within Company Witness Karl G. Boyd's Direct Testimony filed in this case, Mr. Boyd states that the Company proposes to enhance its vegetation initiative by employing additional resources – approximately equivalent to doubling the current number of tree crews working in Ohio. Please provide an explanation as to how the Company plans to achieve this level of added resources realizing there is a potential shortage being placed on vegetation management crews due to the amount of this type of work being completed and proposed by electric utility companies within this region of the United States.

RESPONSE:

The Companies realize this will be a challenge and expect to work very closely with their alliance partner (contractor), Asplundh as it plans for and secures additional trimming crews and equipment. Asplundh's size allows it to leverage existing resources from a wide regional area to supplement and build upon its experienced and stable workforce. The Companies may also supplement the Asplundh trimming crews with "temporary" or short-term crews from other contractors in order to allow Asplundh time to grow its capabilities without sacrificing quality and efficiency. In addition, mechanized equipment (for example: Aerial Saw), will be employed as practical to seek production gains that are not tied directly to the size of the workforce. In recent experience, the Companies were successful in securing additional resources when needed to address above-normal activity.

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 50

As described and included on Page 28, line 21 within Company Witness Karl G. Boyd's Direct Testimony filed in this case, Mr. Boyd states that the Company proposes to enhance its vegetation initiative by employing greater emphasis on cycle-based planning and scheduling. Please provide an explanation as to whether or not the Company is planning to implement a true cycle-based vegetation management program. If so, please provide the cycle [in years] that the Company plans to implement.

RESPONSE:

See the Companies' response to 3-45. Further, based on performance or predictive tools, the Companies may address some circuit segments more frequently.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 51

In actual dollars, what was the average O&M cost per mile in year 2000 to complete the Company's Distribution Vegetation Management Program that was in place at that time, by operating company?

RESPONSE:

The Companies' data for 2000 does not differentiate O&M from Capital for the Distribution Vegetation Management Program. Therefore, the Companies cannot provide an actual O&M number. However, the Companies estimate the O&M expenditures in 2000 to be: CSP = \$3,300 per mile and OP = \$1,200 per mile.

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 52

In actual dollars, what was the average Capital cost per mile in year 2000 to complete the Company's Distribution Vegetation Management Program that was in place at that time, by operating company?

RESPONSE:

The Companies' data for 2000 does not differentiate O&M from Capital for the Distribution Vegetation Management Program. Therefore, the Companies cannot provide an actual Capital number. However, the Companies estimate the Capital expenditures in 2000 to be: CSP = \$375 per mile and OP = \$150 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 53

In actual dollars, what was the average O&M cost per mile in year 2003 to complete the Company's Distribution Vegetation Management Program that was in place at that time, by operating company?

RESPONSE:

The Companies' data for 2003 does not differentiate O&M from Capital for the Distribution Vegetation Management Program. Therefore, the Companies cannot provide an actual O&M number. However, the Companies estimate the O&M expenditures in 2003 to be: CSP = \$4,000 per mile and OP = \$2,600 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 54

In actual dollars, what was the average Capital cost per mile in year 2003 to complete the Company's Distribution Vegetation Management Program that was in place at that time, by operating company?

RESPONSE:

The Companies' data for 2003 does not differentiate O&M from Capital for the Distribution Vegetation Management Program. Therefore, the Companies cannot provide an actual Capital number. However, the Companies estimate the Capital expenditures in 2003 to be: CSP = \$500 per mile and OP = \$310 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 55

In actual dollars, what is the current average O&M cost per mile to complete the Company's current Distribution Vegetation Management Program, by operating company?

RESPONSE:

For the most recent complete year (2007), the average O&M cost per mile to complete the Companies' current Distribution Vegetation Management Program was: CSP = \$9,382 per mile and OP = \$6,307 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 56

In actual dollars, what is the current average Capital cost per mile to complete the Company's current Distribution Vegetation Management Program, by operating company?

RESPONSE:

For the most recent complete year (2007), the average Capital cost per mile to complete the Companies' current Distribution Vegetation Management Program was: CSP = \$1,345 per mile and OP = \$967 per mile.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 57

In actual dollars, what is the projected average O&M cost per mile to complete the Company's current Distribution Vegetation Management Program for plan years 1, 2, and 3 if the Commission in this proceeding disallows the recovery of costs associated with the Company's proposed enhanced vegetation management initiative, by operating company, by year?

RESPONSE:

If the Commission disallows the recovery of the incremental costs associated with the proposed program, then the cost per mile will nevertheless continue to increase due to inflation and an increasing amount of clearing needed (per mile), especially in those parts of the service territory that are heavily forested or are in urban settings. The amount of cost increase cannot be meaningfully estimated.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 58

In actual dollars, what is the projected average Capital cost per mile to complete the Company's current Distribution Vegetation Management Program for plan years 1, 2, and 3 if the Commission in this proceeding disallows the recovery of costs associated with the Company's proposed enhanced vegetation management initiative, by operating company, by year?

RESPONSE:

See the Companies' response to 3-57.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 59

In actual dollars, what is the projected average O&M cost per mile to complete the Company's proposed Distribution Vegetation Management Program [includes the enhanced vegetation management initiative] for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The average O&M cost per mile projections shown in the table below are based on the mileage each Company is projected to complete in the five-year program. It takes into account some ramp-up activities that will make the first year costs somewhat higher on a per mile basis.

Projected Average O&M Cost per Mile		
	CSP	OP
Yr 1	\$10,871	\$8,362
Yr 2	\$9,667	\$7,436
Yr 3	\$8,817	\$6,782

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 60

In actual dollars, what is the projected average Capital cost per mile to complete the Company's proposed Distribution Vegetation Management Program [includes the enhanced vegetation management initiative] for plan years 1, 2, and 3, by operating company, by year?

RESPONSE:

The average Capital cost per mile projections shown in the table below are based on the mileage each Company is projected to complete in the five-year program.

Projected Average Capital Cost per Mile

	CSP	OP
Yr 1	\$1,835	\$1,412
Yr 2	\$1,941	\$1,493
Yr 3	\$2,058	\$1,583

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SS0**

INTERROGATORY REQUEST NO. 61

Please provide an estimated reliability impact on the circuits affected by the Enhanced Cable Initiative as it involves the replacement or rejuvenation of each of the following:

- a. Substation power cables;
- b. Mainline feeder cables; and
- c. Underground residential distribution cables.

RESPONSE:

The Companies have not performed a reliability indices analysis of how much more reliable the cable systems would be, on an individual circuit basis, due to the limited number of customers impacted. However, on the segments replaced or rejuvenated, the customers will realize a substantial improvement in reliability.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 62

Please describe any relationship between the Enhanced Cable Initiative and CSP's project to improve UGN facilities in the Muirfield Village area.

RESPONSE:

The Company is addressing underground facilities in the Muirfield Village area separate from the Enhanced Cable Initiative. CSP's project to improve the underground system in the Muirfield Village area has four components that are common to the Enhanced Cable Initiative. These include: the replacement of the feeder exit cables; the replacement of the mainline feeder cables; and the replacement and rejuvenation of the URD cables throughout the development.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 63

Please discuss the extent to which the Enhanced Cable Initiative will address all cable facilities which may require repair or replacement over the next five years, and describe the methodology used to make this assessment.

RESPONSE:

The Companies have approximately 6,400 miles of underground cable currently in service. During the three-year period of the ESP, the Companies anticipate repairing/replacing 615 miles of that total under the Enhanced Cable Initiative. This leaves 5,785 miles of underground cable, which may or may not require repair or replacement over the next five years.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 64

Please provide the supporting analysis which factored in O&M savings and outage reduction that guided the company to arrive to a proposed plan length of three years instead of a longer-term program.

RESPONSE:

The Enhanced Cable Initiative is meant to be an on-going program to deal with the replacement and rejuvenation of aging cable systems. It is not a three-year program.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 65

For each of the following cable categories listed below, what is the average in-service life expectancy [in years] for the cable installed by the Company: prior to 1960, in the 1960s, in the 1970s, in the 1980s, in the 1990s, in the 2000s, by cable category, by aforementioned vintage years.

- a. Overhead substation power cable
- b. Underground substation power cable
- c. Overhead feeder exit cable from substations
- d. Underground feeder exit cable from substations
- e. Overhead mainline feeder cable
- f. Underground mainline feeder cable
- g. Riser cable
- h. Overhead secondary cable
- i. Underground residential distribution (URD) cable

RESPONSE:

The Companies do not have overhead substation power cable, overhead feeder exit cable, or overhead mainline feeder cable currently in service. Based upon the estimated average in-service life expectancy at the time of installation, the average in-service life expectancy [in years] for the cable installed by the Companies: prior to 1960, in the 1960s, in the 1970s, in the 1980s, in the 1990s, in the 2000s, by cable category, by aforementioned vintage years is as follows:

Average in-service life expectancy (in years) for cable installed by the Company*

	< 1960	1960s	1970s	1980s	1990s	2000s
a. Overhead substation power cable	Not Applicable					
b. Underground substation power cable	20	20	20-30	30-40	40	40+
c. Overhead feeder exit cable from substations	Not Applicable					
d. Underground feeder exit cable from substations	20	20	20-30	30-40	40	40+
e. Overhead mainline feeder cable	Not Applicable					
f. Underground mainline feeder cable	20	20	20-30	30-40	40	40+
g. Riser cable	20	20	20-30	30-40	40	40+
h. Overhead secondary cable	50	50	50	50	50	50
i. Underground residential distribution (URD) cable	N/A	N/A	20	20	30-40	40+

* Based upon the estimated average in-service life expectancy at the time of installation

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SSO**

INTERROGATORY REQUEST NO. 66

For each of the following cable categories listed below, please provide the number of miles of cable that currently remains in-service which the Company installed: prior to 1960, in the 1960s, in the 1970s, in the 1980s, in the 1990s, in the 2000s, by operating company, by cable category, by aforementioned vintage years.

- a. Overhead substation power cable
- b. Underground substation power cable
- c. Overhead feeder exit cable from substations
- d. Underground feeder exit cable from substations
- e. Overhead mainline feeder cable
- f. Underground mainline feeder cable
- g. Riser cable
- h. Overhead secondary cable
- i. Underground residential distribution (URD) cable

RESPONSE:

The Companies do not have overhead substation power cable, overhead feeder exit cable, or overhead mainline feeder cable currently in service. For the other cable categories, data is not available.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 67

For each of the following cable categories listed below, what is the average in-service life expectancy [in years] for the cable currently being installed by the Company, by cable category.

- a. Overhead substation power cable
- b. Underground substation power cable
- c. Overhead feeder exit cable from substations
- d. Underground feeder exit cable from substations
- e. Overhead mainline feeder cable
- f. Underground mainline feeder cable
- g. Riser cable
- h. Overhead secondary cable
- i. Underground residential distribution (URD) cable

RESPONSE:

The Companies do not have overhead substation power cable, overhead feeder exit cable, or overhead mainline feeder cable currently in service. The estimated average in-service life expectancy [in years] of cable currently being installed by the Companies, by cable categories is as follows:

- | | |
|---|----------------|
| a. Overhead substation power cable | Not applicable |
| b. Underground substation power cable | 40+ years |
| c. Overhead feeder exit cable from substations | Not applicable |
| d. Underground feeder exit cable from substations | 40+ years |
| e. Overhead mainline feeder cable | Not applicable |
| f. Underground mainline feeder cable | 40+ years |
| g. Riser cable | 40+ years |
| h. Overhead secondary cable | 50 years |
| i. Underground residential distribution (URD) cable | 40+ years |

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 68

For each of the following cable categories listed below, what is the average additional in-service life extension expectancy [in years] for the cable proposed to be restored (rejuvenated) via cable injection by the Company, by cable category.

- a. Underground substation power cable
- b. Underground feeder exit cable from substations
- c. Underground mainline feeder cable
- d. Riser cable
- e. Underground residential distribution (URD) cable

RESPONSE:

The Companies plan to restore (rejuvenate) only URD cable. The additional in-service life extension expectancy [in years] for the cable proposed to be restored (rejuvenated) via cable injection by the Companies is warranted by the manufacturer/vendor to be 20 years.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 69

For each of the following cable categories listed below, what is the Company's projected average O&M cost per mile [in actual dollars] for the proposed cable replacement for plan years 1, 2, and 3, by operating company, by cable category, by year.

- a. Overhead substation power cable
- b. Underground substation power cable
- c. Overhead feeder exit cable from substations
- d. Underground feeder exit cable from substations
- e. Overhead mainline feeder cable
- f. Underground mainline feeder cable
- g. Riser cable
- h. Overhead secondary cable
- i. Underground residential distribution (URD) cable

RESPONSE:

- a. Overhead substation power cable
The plan does not address overhead substation power cable.

- b. Underground substation power cable

	Avg O&M Cost Per Mile - Year 1	Avg O&M Cost Per Mile - Year 2	Avg O&M Cost Per Mile - Year 3
CSP	\$150,000	\$159,000	\$168,000
OP	\$150,000	\$159,000	\$168,000

- c. Overhead feeder exit cable from substations
The plan does not address overhead feeder exit cable from substations.

- d. Underground feeder exit cable from substations

	Avg O&M Cost Per Mile - Year 1	Avg O&M Cost Per Mile - Year 2	Avg O&M Cost Per Mile - Year 3
CSP	\$113,000	\$120,000	\$127,000
OP	\$113,000	\$120,000	\$127,000

- e. Overhead mainline feeder cable
The plan does not address overhead mainline feeder cable.

RESPONSE TO INTERROGATORY REQUEST NO. 69 CONTINUED

f. **Underground mainline feeder cable**

	Avg O&M Cost Per Mile - Year 1	Avg O&M Cost Per Mile - Year 2	Avg O&M Cost Per Mile – Year 3
CSP	\$113,000	\$120,000	\$127,000
OP	\$113,000	\$120,000	\$127,000

g. **Riser cable**

	Avg O&M Cost Per Mile - Year 1	Avg O&M Cost Per Mile - Year 2	Avg O&M Cost Per Mile – Year 3
CSP	\$113,000	\$120,000	\$127,000
OP	\$113,000	\$120,000	\$127,000

h. **Overhead secondary cable**

The plan does not address overhead secondary cable.

i. **Underground residential distribution (URD) cable**

The Companies' projected costs are all Capital costs.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 70

For each of the following cable categories listed below, what is the Company's projected average Capital cost per mile [in actual dollars] for the proposed cable replacement for plan years 1, 2, and 3, by operating company, by cable category, by year.

- a. Overhead substation power cable
- b. Underground substation power cable
- c. Overhead feeder exit cable from substations
- d. Underground feeder exit cable from substations
- e. Overhead mainline feeder cable
- f. Underground mainline feeder cable
- g. Riser cable
- h. Overhead secondary cable
- i. Underground residential distribution (URD) cable

RESPONSE:

- a. Overhead substation power cable
See response to 3-69 a.

- b. Underground substation power cable

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$1,785,000	\$1,891,000	\$2,001,000
OP	\$1,785,000	\$1,891,000	\$2,001,000

- c. Overhead feeder exit cable from substations
See response to 3-69 c.

- d. Underground feeder exit cable from substations

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$1,339,000	\$1,418,000	\$1,501,000
OP	\$1,339,000	\$1,418,000	\$1,501,000

RESPONSE TO INTERROGATORY REQUEST NO. 70 CONTINUED

e. Overhead mainline feeder cable
See response to 3-69 e.

f. Underground mainline feeder cable

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$1,339,000	\$1,418,000	\$1,501,000
OP	\$1,339,000	\$1,418,000	\$1,501,000

g. Riser cable

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$1,339,000	\$1,418,000	\$1,501,000
OP	\$1,339,000	\$1,418,000	\$1,501,000

h. Overhead secondary cable
See response to 3-69 h.

i. Underground residential distribution (URD) cable

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$179,000	\$190,000	\$201,000
OP	\$179,000	\$190,000	\$201,000

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 71

For each of the following cable categories listed below, what is the Company's projected average O&M cost per mile [in actual dollars] for the proposed cable restoration (rejuvenation) via cable injection for plan years 1, 2, and 3, by operating company, by cable category, by year.

- a. Underground substation power cable
- b. Underground feeder exit cable from substations
- c. Underground mainline feeder cable
- d. Riser cable
- e. Underground residential distribution (URD) cable

RESPONSE:

The costs projected by the Companies are all Capital costs.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 72

For each of the following cable categories listed below, what is the Company's projected average Capital cost per mile [in actual dollars] for the proposed cable restoration (rejuvenation) via cable injection for plan years 1, 2, and 3, by operating company, by cable category, by year.

- a. Underground substation power cable
- b. Underground feeder exit cable from substations
- c. Underground mainline feeder cable
- d. Riser cable
- e. Underground residential distribution (URD) cable

RESPONSE:

- a. Underground substation power cable
The Companies do not anticipate cable restoration for this cable category.
- b. Underground feeder exit cable from substations
The Companies do not anticipate cable restoration for this cable category.
- c. Underground mainline feeder cable
The Companies do not anticipate cable restoration for this cable category.
- d. Riser cable
The Companies do not anticipate cable restoration for this cable category.
- e. Underground residential distribution (URD) cable

	Avg Capital Cost Per Mile - Year 1	Avg Capital Cost Per Mile - Year 2	Avg Capital Cost Per Mile - Year 3
CSP	\$83,000	\$88,000	\$93,000
OP	\$83,000	\$88,000	\$93,000

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 73

Please provide an estimated reliability impact on the circuits affected (and the number of circuits affected) by Distribution Automation Initiative as follows:

- a. Inside the gridSMART territory
- b. Outside the gridSMART territory
- c. Inside and outside the gridSMART territory (combined)

RESPONSE:

- a. Inside the gridSMART territory

The estimated reliability improvements are based on 2007 actual SAIDI performance of 147 minutes inside the gridSMART territory. The projected avoided SAIDI minutes are 65 once the project is fully implemented and operational for one year. There are approximately 70 circuits involved.

- b. Outside the gridSMART territory

The estimated reliability improvements are based on 2007 actual SAIDI performance. There would be no projected avoided SAIDI minutes outside the gridSMART territory.

- c. Inside and outside the gridSMART territory (combined)

The estimated reliability improvements are based on 2007 actual SAIDI performance of 198 minutes across CSP. The projected avoided SAIDI minutes are 9 across CSP once the project is fully implemented and operational for one year.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 74

Please describe and discuss the communication aspects of the Distribution Automation Initiative (outside the geographic area covered by the gridSMART Phase 1 Initiative) and describe the technology and facilities that would be used to provide that communication.

RESPONSE:

The communication system used by DA will allow for communication between switches, capacitor banks, and automated devices back to a centralized processor. The Company has not yet determined the communications system which will be implemented outside the gridSMART area. The systems being evaluated are wireless broadband or radio frequency mesh technology.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO .75

Please describe the criteria the Companies will use to decide where to install automated switches for the Distribution Automation Initiative (outside the area covered by the gridSMART Phase 1 Initiative).

RESPONSE:

In the initial rollout, the Companies will typically consider the following criteria:

- ☐ economic development
- Existing station transformer capacity
- Station bus tie capability
- Existing feeders with large conductor on the main three phase
- Existing switch points on circuits for ties to adjacent circuits and for main-line sectionalizing
- Customer Mix
- Historical performance

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 76

Please provide the number of circuits that are expected to benefit (in terms of improved reliability performance) from implementation of the Distribution Automation Initiative (outside the area covered by the gridSMART Phase 1 Initiative).

RESPONSE:

The Companies estimate that approximately 20 circuits in 3 years will directly benefit from implementation of the Distribution Automation Initiative (outside the area covered by the gridSMART Phase 1 Initiative).

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 77

Does the Company consider the Enhanced Overhead Inspection and Mitigation Initiative prescriptive in nature?

RESPONSE:

See the Companies' response to 3-14.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 78

Does the Company consider the Enhanced Overhead Inspection and Mitigation Initiative preventative in nature?

RESPONSE:

See the Companies' response to 3-15.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 79

Please provide an estimated reliability impact on the circuits affected by DA switches that are installed as part of the gridSMART Phase 1 Initiative.

RESPONSE:

See the Companies' response to 3-73a.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
COMMISSION STAFF'S
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INTERROGATORY REQUEST NO. 80

Please provide an estimated reliability impact on those circuits affected by the gridSMART Phase 1 Initiative (but have no DA switches installed).

RESPONSE:

The Companies plan to install DA switches on all circuits affected by the gridSMART Phase 1 Initiative.

Prepared by: K. G. Boyd

AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 81

For each of the four enhanced initiatives, please provide the primary assumptions used to prepare the cost estimates. Include rationale, where applicable, for forecasted units of work, unit cost estimates, work hours, labor cost, outside contract costs, materials and supplies, and basis for O&M vs. capital expenditures. Also describe how the Companies calculated incremental cost, including the calculation of any associated base-level amounts that were involved.

RESPONSE:

Enhanced Overhead Inspection and Mitigation Initiative

- Primary Assumptions
 - All overhead primary facilities are included
 - Will require 5 years to inspect and mitigate all facilities (Costs in Exhibit KGB-1 are years 1 through 3 only.)
 - Most labor will come from contractors
 - Inspection, repairs, and planned replacements/enhancements will be managed by circuit and integrated together as much as possible.
- Work Unit Assumptions for overhead inspection and repair were based on the following 5 Activities. The assigned %'s are from field experience including a few "pilot" circuits done in 2006.
 1. Visual inspect from ground – all 1,500 circuits; about 970,000 poles
 2. Aerial inspect – no repairs – 30% of poles
 3. Aerial inspect – minor repairs/replacements – 18% of poles
 4. Aerial inspect – major repairs/replacements – 3% of poles
 5. Major repairs – full structure replacement – 1.5% of poles
- Cost Assumptions
 - Used current labor and material rates and applied estimated work hours to each of the 5 Activities.
 - Labor and Material splits were unique to each of 5 Activities or the particular equipment replacement/enhancement/addition.
 - Used historic cost data for equipment replacements, such as cutouts, arresters, reclosers.
 - Capital vs O&M is based on type of work units and follows standard accounting rules.
- Incremental Calculation - The historic costs for the overhead and inspection program was subtracted to arrive at the incremental cost.

RESPONSE TO INTERROGATORY REQUEST NO. 81 CONTINUED

Enhanced Vegetation Initiative

- **Primary Assumptions -**
 - All overhead primary facilities are included
 - Will require about 5 years to fully clear all 1,500 circuits (Costs in Exhibit KGB-1 are years 1 through 3 only.)
- **Work Unit and Cost Assumptions -** Based on research done by AEP and Asplundh in 2003/2004 and updated.
 - Projected work unit volume to fully clear entire system of the two Companies and average unit costs (today's dollars) are:
 - 1,500,000 tree trims at \$75 each
 - 860,000 tree removals at \$88 each
 - 8,700 acres of brush cleared at \$1,700 each
 - Total direct cost to clear entire system is approximately \$210M to \$220M in today's dollars.
 - Basis for O&M to Capital split is recent historic actuals.
- **Incremental calculation –** To arrive at the incremental request, the Companies subtracted the average of the historic annual spend from the projected total spend, per year, for the Enhanced Vegetation Initiative.

Enhanced Cable Initiative

- **Primary Assumptions**
 - Replace 30% of the feeder exit cable mileage over 10 year period
 - Station cable replacement is approximately 10% of feeder exit replacement length
 - Replace or rejuvenate 30% of URD cable mileage over 10 year period
 - Complete rejuvenation of injectable cables over 10 year period
 - Labor performed by contractors
- **Work Unit Assumptions**
 - Replace 8.6 miles of feeder exit cable annually
 - Replace 0.86 miles of station cable annually
 - Replace 81 miles of URD cable annually – approx. 1.25% of total mileage
 - Rejuvenate 115 miles of URD cable annually
- **Cost Assumptions**
 - Used current contract labor and material costs
 - Applied to estimated hours for each type of work unit
 - Basis of Capital vs O&M is based on type of work units
- **Incremental Calculation**
 - The 2009 proposed budget of \$4.3M for cable replacement and rejuvenation was subtracted from the annual cost of the Enhanced Cable Initiative.

RESPONSE TO INTERROGATORY REQUEST NO. 81 CONTINUED

Distribution Automation Initiative

- **Primary Assumptions –**
 - Annual estimates are based on 6 circuits a year.
 - Activity to ramp up the first 5 years. (Costs in Exhibit KGB-1 are years 1 through 3 only.)
- **Work Unit and Cost Assumptions -**
 - Used number of automated switches as basic unit for describing ramp up and costs.
 - Year 1 = 30 switches
 - Year 2 = 30 switches
 - Year 3 = 40 switches
 - Year 4 = 40 switches
 - Year 5 = 50 switches
 - Assumed a split of 60% circuits in OP and 40% circuits in CSP. (Note gridSMART Phase I is all CSP).
 - Costs are nearly 100% Capital
 - Unit costs will vary somewhat but average about \$80,000 per installed and fully enabled automated switch
- **Incremental Calculation – Total costs are incremental since the Companies do not currently have a distribution automation program.**

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 82

For each of the four enhancement initiatives, please discuss all factors related to that program that would reduce interruption frequency or duration. Please include the following topics in that discussion:

- a. The extent to which the program addresses a primary outage cause;
- b. The percentage of circuits affected by the program;
- c. How quickly the program will be applied across the affected circuits;
- d. Whether the program primarily impacts SAIFI or CAIDI;
- e. The extent to which the program represents a big increase in work volume compared to prior years; and
- f. Any other pertinent factors affecting reliability.

RESPONSE:

Enhanced Overhead Inspection and Mitigation Initiative will reduce equipment related momentary interruptions and sustained outages to customers. This can be accomplished through a comprehensive overhead inspection process, which will better enable the Companies to proactively identify and replace hardware and equipment that either are prone to failure or that have the potential to fail. Once a circuit has been fully mitigated, the Companies are forecasting a 40% reduction in distribution primary equipment related outages based on 2007 performance. All of the overhead distribution circuits will be affected by this program. The program will be applied across the affected circuits in approximately 5 years. The program will primarily impact SAIFI. However, because momentary interruptions are often a prelude to sustained outages, it is not uncommon to also see a reduction in momentary interruptions as well. Implementation of this program will require a significant increase in the work volume and physical workforce as represented by the additional cost shown in Exhibit KGB-1.

Enhanced Vegetation Initiative will reduce and/or eliminate tree caused momentary interruptions and/or sustained outages to customers. This can be accomplished through an increased focus of moving from a performance-based to a more cycle-based approach regarding vegetation management. Once a circuit has been fully mitigated, the Companies are forecasting an approximately 60% reduction in "tree inside right-of-way" distribution primary outages. All of the overhead distribution circuits will be affected by this program. The program will be applied across the affected circuits over approximately 5 years. The program will primarily impact SAIFI. However, momentary interruptions should be reduced as well. Implementation of this program will approximately double the current work volume and physical workforce. AEP Ohio would employ the use of improved technology to collect, store, predict, and analyze specific vegetation data.

RESPONSE TO INTERROGATORY REQUEST NO. 82 CONTINUED

Enhanced Underground Cable Initiative will reduce momentary interruptions and sustained outages due to failures of aging underground cable. This initiative includes substation power cables, mainline feeder cables and underground residential distribution (URD) cables in developments served by underground facilities. This can be accomplished by targeting underground cables for replacement and/or by restoring (rejuvenating) the integrity of the cable insulation through the injection of a compound that restores the strength of the cable insulation. The program will affect approximately 615 miles (approximately 10%) of underground cables in approximately 3 years. While this program has minimal impact on reliability indices because of the comparatively few customers served by those facilities, the program will significantly improve reliability of service to those customers served by those facilities. Implementation of this program will increase the current work volume approximately 5 to 6 times.

Distribution Automation (DA) Initiative provides both reliability and operational benefits through the use of advanced technology. The DA system allows for the automatic restoration of service to customers in zones outside of the zone in which the fault occurred. The system also transmits information about the characteristics of the fault allowing for faster service restoration for customers inside the affected zone. Approximately 20 distribution circuits (less than 2%) will be affected by this program in three years. The program will impact both SAIFI and CAIDI. Currently, there are two DA projects in AEP Ohio and this would represent a new program. Compared to the other three programs, the DA Initiative will not constitute as substantial an increase in work volume.

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 83

Assuming the Companies continued measuring their reliability performance as they have in the past, and assuming they completed each of the four enhanced reliability initiatives in the Enhanced Service Reliability Plan, please provide an estimate of each operating company's improvement on SAIFI and CAIDI by comparing its year 2012 performance against its respective average for the 3-year period 2005 through 2007.

RESPONSE:

The 2005 through 2007 average SAIFI and CAIDI for CSP are 1.68 and 121.0 and for OP they are 1.42 and 138.6, respectively. Assuming all other things remain equal from the 2005 through 2007 averages, which they will not (see Karl Boyd's Direct Testimony at page 8 through 10), the estimated improvement associated with the Enhanced Service Reliability Plan for SAIFI and CAIDI in 2012 would be to 1.49 and 112.9 for CSP and to 1.19 and 133.1 for OP.

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 84

Please describe any revisions the Companies' would make to their ESSS Rule 10 system reliability targets to recognize the expected performance improvements resulting from implementation of the four enhanced reliability initiatives in its Enhanced Service Reliability Plan. Include supporting rationale and related documentation. [Will AEP realize this is our prompt to provide a copy of its July 10 proposal to revise its Rule 10 Targets?]

RESPONSE:

The Companies would not propose to make any revisions at this time to their ESSS Rule 10 system reliability targets related to performance improvements, associated with the Enhanced Service Reliability Initiative, that have not yet been realized, particularly in light of the proposed rule in Case No. 06-653-EL-ORD that makes failure to meet a target a rule violation. Rather, the Companies would consider revising their targets based on actual experience as the plan is implemented.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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INTERROGATORY REQUEST NO. 85

Please estimate the dollar impact on each operating company's O&M expense (and the timing of such impact) expected to result from implementation of each of the four enhanced reliability initiatives in its Enhanced Service Reliability Plan (ESRP). Include impacts during the five years following completion of the ESRP.

RESPONSE:

Please refer to Karl Boyd's Direct Testimony on the following pages:

- Page 26 for the Enhanced Overhead Inspection and Mitigation Initiative (Chart 5);
- Page 31 for the Enhanced Vegetation Management Initiative (Chart 7);
- Page 33 for the Enhanced Underground Cable Initiative (Chart 8); and
- Page 36 for the Distribution Automation Initiative (Chart 9).

Savings in O&M in association with implementation of these plans will not be material during the three-year ESP period. Moreover, impacts to the Companies' O&M expenses from 2014 to 2018 have not been estimated.

Prepared by: K. G. Boyd

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INTERROGATORY REQUEST NO. 86

For each of the four enhanced reliability initiatives in the ESRP, please estimate the impact on customers of not implementing the initiative.

RESPONSE:

The impact on customers will be an increasing number of momentary interruptions and sustained outages caused by tree contacts and equipment failures. This will happen at a time when customers' expectations for reliable electric service are increasing (see Karl Boyd's Direct Testimony at page 8 through 10). These four enhanced reliability initiatives are how we plan to meet our customers' increasing expectations.

Prepared by: K. G. Boyd

**AEP OHIO'S RESPONSES TO
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THIRD REQUEST
CASE NO. 08-917-EL-SS0 & CASE NO. 08-918-EL-SS0**

INTERROGATORY REQUEST NO. 87

Please provide the total number of circuits affected by each of the four enhanced reliability initiatives in the ESRP.

RESPONSE:

See the Companies' response to 3-82.

Prepared by: K. G. Boyd