



Legal Department

November 29, 2016

The Honorable Sarah Parrot  
Attorney Examiner  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus Ohio 43215-3793

**Steven T. Nourse**  
Senior Counsel –  
Regulatory Services  
(614) 716-1608 (P)  
(614) 716-2014 (F)  
stnourse@aep.com

*Re: In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan, Case No. 13-2385-EL-SSO; In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority, Case No. 13-2386-EL-AAM*

Examiner Parrot:

On behalf of Ohio Power Company, I am enclosing an updated depreciation study, per the Commission's directive in this case. Thank you for your attention to this matter.

Respectfully Submitted,

//s//Steven T. Nourse

cc: Parties of Record

**OHIO POWER COMPANY**

**DEPRECIATION STUDY REPORT**

**OF**

**ELECTRIC PLANT IN SERVICE**

**AT DECEMBER 31, 2015**

# Depreciation Study Report

## Table of Contents

---

<u>SUBJECT</u>	<u>PAGE</u>
TITLE PAGE .....	1
TABLE OF CONTENTS .....	2
INTRODUCTION .....	3
DISCUSSION OF METHODS AND PROCEDURES USED IN THE STUDY .....	5
Group Method .....	5
Calculation of Annual Depreciation Rates .....	5
Methods of Life Analysis .....	6
Final Selection of Average Life and Curve	
Type .....	11
Net Salvage .....	11
Calculation of Depreciation Requirement .....	12
Study Results .....	12
SCHEDULES - TITLE PAGE .....	14
SCHEDULE I - EXPLANATION OF COLUMNS .....	15
SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE WHOLE LIFE METHOD .....	16
SCHEDULE II - ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE WHOLE LIFE METHOD .....	17
SCHEDULE III - COMPARISON OF MORTALITY CHARACTERISTICS .....	18

## **INTRODUCTION**

This report presents the results of a depreciation study of Ohio Power Company's (OPCo or the Company) depreciable Distribution and General electric utility plant in service at December 31, 2015. The study was prepared by Jason A. Cash, Staff Accountant – Property Accounting Policy and Research at American Electric Power Service Corporation (AEPSC). The purpose of this depreciation study was 1) to examine OPCo's annual depreciation accrual rates for each of the primary Distribution and General Plant accounts, which comprise the groups for which OPCo computes its annual depreciation expense and 2) to comply with the order in Case No. 13-2385-EL-SS and Case No. 13-2386-EL-AAM where the Commission adopted the staff's recommendation to require that OPCo file an updated depreciation study by November 2016.

The depreciation rates that were calculated in this study are based on the Whole Life Method of computing depreciation. Further explanation of this method is contained in the "Discussion of Methods and Procedures Used in the Study" section of this report.

The definition of depreciation used in this Study is the same as that used by the Federal Energy Regulatory Commission (FERC):

"Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities."

"Service value means the difference between original cost and the net salvage value (net salvage value means the salvage value of the property retired less the cost of removal) of the electric plant." (FERC Accounting and Reporting Requirements for Public Utilities and Licensees, ¶15.001.)

Schedule I of this report shows the calculated depreciation accrual rates by primary plant accounts and composite rates to functional plant classifications. Schedule II shows a comparison of OPCo's current depreciation rates and accruals to the rates and accruals calculated in this study using the Company's Distribution Plant Balances in accounts 361 to 373 and General Plant balances in accounts 390 to 398. Schedule III provides a comparison of the current Depreciation Study mortality characteristics that were used to compute the depreciation rates and the mortality characteristics used to determine the existing depreciation rates and accruals (from the Company's Case Nos. 11-351-EL-AIR AND 11-352-EL-AIR). A comparison of OPCo's existing functional group composite depreciation rates and accruals to the study functional group rates and accruals follows:

**Table 1 - Depreciation Rates and Accruals  
Based on Depreciable Plant in Service at December 31, 2015**

<u>Functional Plant Group</u>	<u>Existing</u>		<u>Study</u>		<u>Difference</u>
	<u>Rates</u>	<u>Accruals</u>	<u>Rates</u>	<u>Accruals</u>	
<b>Distribution Plant</b>	3.69%	155,710,474	3.58%	151,232,314	(4,478,160)
<b>General Plant</b>	2.83%	7,560,536	2.68%	7,156,195	(404,341)
<b>Total Plant</b>	3.63%	163,271,010	3.49%	156,812,310	(4,882,501)

**Note:** The existing rates and accruals shown in Table 1 exclude amortization of the Theoretical Reserve as ordered in the stipulation agreement from Case Nos. 11-351-EL-AIR AND 11-352-EL-AIR).

Based on Distribution and General Depreciable Plant in Service as of December 31, 2015, a decrease in annual depreciation expense of \$4,882,501 would result from this depreciation study. The depreciation rate changes are primarily due to increases in the estimated average service life for six Distribution accounts. These changes use OPCo's current study depreciation rates and compare to the depreciation rates approved in Case Nos. 11-351-EL-AIR AND 11-352-EL-AIR (See Schedule II and Attachment D in the stipulation agreement of Case Nos. 11-351-EL-AIR AND 11-352-EL-AIR).

### **DISCUSSION OF METHODS AND PROCEDURES USED IN THE STUDY**

#### **1. Group Method**

All of the depreciable property included in this report was considered on a group plan. Under the group plan, depreciation expense is accrued upon the basis of the original cost of all property included in each depreciable plant account. Upon retirement of any depreciable property, its full cost, less any net salvage realized, is charged to the accrued depreciation reserve regardless of the age of the particular item retired. Also, under this plan, the dollars in each primary plant account are considered a separate group for depreciation accounting purposes and an annual depreciation rate for each account is determined. The annual accruals by primary account were then summed, to arrive at the total accrual for each functional group. The total accrual divided by the original cost yields the functional group accrual rate.

#### **2. Calculation of Annual Depreciation Rates By the Whole Life Method**

OPCo's current depreciation rates and the amounts calculated in this study are based on the Whole Life Method for Distribution and General Plant. The Whole Life Method recovers the original cost of the plant, adjusted for net salvage, over the average

service life of the plant. By using this method, the annual depreciation rate for each account is determined on the following basis:

Annual  
Depreciation Expense =

$$\frac{(\text{Orig. Cost}) - (\text{Net Salvage Ratio})}{\text{Average Service Life}}$$

Annual  
Depreciation Rate =  $\frac{\text{Annual Depreciation Expense}}{\text{Original Cost}}$

### 3. Methods of Life Analysis

Depending upon the type of property and the nature of the data available from the property accounting records, one of three life analyses was used to arrive at the historically realized mortality characteristics and service lives of the depreciable plant investments.

#### Actuarial Analysis

This method of analyzing past experience represents the application to utility property of statistical procedures developed in the life insurance field for investigating human mortality. It is distinguished from other methods of life estimation by the requirement that it is necessary to know the age of the property at the time of its retirement and the age of survivors, or plant remaining in service; that is, the installation date must be known for each particular retirement and for each particular survivor.

The application of this method involves the statistical procedure known as the "annual rate method" of analysis. This procedure relates the retirements

during each age interval to the exposures at the beginning of that interval, the ratio of these being the annual retirement ratio. Subtracting each retirement ratio from unity yields a sequence of annual survival ratios from which a survivor curve can be determined. This is accomplished by the consecutive multiplication of the survivor ratios. The length of this curve depends primarily upon the age of the oldest property. Normally, if the period of years from the inception of the account to the time of the study is short in relation to the expected maximum life of the property, an incomplete or stub survivor curve results.

While there are a number of acceptable methods of smoothing and extending this stub survivor curve in order to compute the area under it from which the average life is determined, the well-known Iowa Type Curve Method was used in this study.

By this procedure, instead of mathematically smoothing and projecting the stub survivor curve to determine the average life of the group, it was assumed that the stub curve would have the same mortality characteristics as the type curve selected. The selection of the appropriate type curve and average life is accomplished by plotting the stub curve, superimposing on it Iowa curves of the various types and average lives drawn to the same scale, and then determining which Iowa type curve and average life best matches the stub. This method was used for OPCo Distribution accounts 361 and 362.

#### Simulated Plant Record Analysis

The “Simulated Plant Record” (SPR) method designates a class of statistical techniques that provide an estimate of the age distribution, mortality



dispersion and average service life of property accounts whose recorded history provides no indication of the age of the property units when retired from service. For each such account, the available property records usually reveal only the annual gross additions, annual retirements and balances with no indication of the age of either plant retirements or annual plant balances. For this study, the “Balances method” of analysis was used.

The SPR Balances Method is a trial and error procedure that attempts to duplicate the annual balance of a plant account by distributing the actual annual gross additions over time according to an assumed mortality distribution. Specifically, the dollars remaining in service at any date are estimated by multiplying each year’s additions by the successive proportion surviving at each age as given by the assumed survivor characteristics. For a given year, the balance indicated is the accumulation of survivors from all vintages and this is compared with the actual book balance. This process is repeated for a different survivor curves and average life combinations until a pattern is discovered which produces a series of “simulated balances” most nearly equaling the actual balances shown in a company’s books.

This determination is based on the distribution producing the minimum sum of squared differences between the simulated balance and the actual balances over a test period of years.

The iterative nature of the simulated methods makes them ideally suited for computerized analysis. For each analysis of a given property account, the computer program provides a single page summary containing the results of each analysis indicating the “best fit” based on criteria selected by the user.

The results of my analysis by the Balance Method are in the Depreciation Study work papers accompanying this filing. In the case of the Balances Method each curve type tested is shown along with the average service life that produced the minimum sum of squared differences from the actual balances. The analysis also shows the value of the Index of Variation of the difference that is calculated according to the following equation for the Balances Method:

$$\text{Index of Variation} = (1000) \frac{\text{Sum of Squared Differences}}{\text{Number of Test Years}} \frac{\text{Average Actual Balance}}$$

The lower the value of the Index the better the agreement with the actual data.

The SPR Method of Life Analysis was utilized for the following accounts:

- 364.0 Distribution Poles, Towers & Fixtures
- 365.0 Distribution OH Conductor & Devices
- 366.0 Underground Conduit
- 367.0 Underground Conductor & Devices
- 368.0 Distribution Line Transformers
- 369.0 Distribution Services
- 370.0 Meters
- 371.0 Installation on Customers Premises
- 372.0 Leased Property on Customers Premises
- 373.0 Street Lighting & Signal Systems
- 390.0 Structures & Improvements

The investment in account 370 (Distribution Meters) consists of a

combination of Automated Meter Reading (AMR) meters and Electromechanical and other types of meters. AMR meters typically have a much shorter useful life than Electromechanical meters. As a result, a weighted average calculation was used to determine the average service life of the meters in account 370. The 15 year life is supported by AEP Engineering and the manufacturer of the AMR Meters.

The investment in accounts 370.16 (Distribution Meters) and 397.16 (Communication Equipment consists of Advanced Meter Infrastructure (AMI) meters and related communication equipment. AMI meters are different from AMR meters in that they use two way communication and information systems to support their interaction. AMI meters use internal communications to convey real-time energy use and load information to both AEP Ohio and to the customer. In addition, AMI meters have the capability to monitor equipment and quickly convey information about certain malfunctions and operating conditions. Even with the differences, AMI meters are expected to have approximately the same useful life as the AMR meters as supported by AEP Engineering and the manufacturer of the AMI/AMR Meters.

#### Vintage Year Accounting – General Equipment

In 1998, the Company began using a vintage year accounting method for general plant accounts 391 to 398 in accordance with Federal Energy Regulatory Commission Accounting Release Number 15 (AR-15). This accounting method requires the amortization of vintage groups of property over their useful lives. AR-15 also requires that property be retired when it meets its average service life.

As a result, this study continues to use the current useful life approved by the Commission to calculate the depreciation rates for general plant accounts 391

to 398. The 15 year life estimated average service life for account 397.16 is discussed above.

4. Final Selection of Average Life and Curve Type

The final selection of average life and curve type for each depreciable plant account analyzed by the Actuarial and SPR Methods was primarily based on the results of the mortality analyses of past retirement history.

5. Net Salvage

The net salvage percentages used in this report are expressed as percent of original cost and are based primarily on the Company's experience combined with the judgment of the analyst. To aid in the selection of net salvage percentages, a review was made of the Company's experience for each primary account within each functional plant group for years 1969 - 2015.

The salvage program analyzes historical experience on an annual basis, on the cumulative history basis and for 5-year moving averages to get the historical net salvage, as well as indicated trends.

The net salvage percents selected were converted to net salvage ratios and appear in Column V on Schedule I and were used to determine the total amount to be recovered through depreciation. The same net salvage was also reflected in the determination of the calculated depreciation requirement.

The net salvage ratios shown in Column V on Schedule I of this report may be

explained as follows:

- a. Where the ratio is shown as unity (1.00), it was assumed that the net salvage in that particular account would be zero.
- b. Where the ratio is less than unity, it was assumed that the salvage exceeded the removal costs. For example, if the net salvage were 20%, the net salvage ratio would be expressed as .80.
- c. Where the ratio is greater than unity, it was assumed that the salvage was less than the cost of removal. For example, if the net salvage were minus 5%, the net salvage ratio would be expressed as 1.05.

6. Calculation of Depreciation Requirement at December 31, 2015

The accumulated depreciation by individual plant accounts was taken from the Company's books at December 31, 2015. The calculation of a theoretical reserve for each plant account is provided on Schedule I for information purposes. OPCo's current depreciation rates and the amounts calculated in this study for Distribution and General Plant are Whole Life rates that do not take into account over or under accruals that result from changes in estimates of service lives and net salvage.

7. Study Results

For Distribution and General Property, the average service life, retirement dispersion pattern and net salvage pattern used to calculate each primary plant account rate are shown on Schedule III. The mortality characteristics and net salvage values for

the current rates are also shown. The changes to the mortality characteristics follow the trends shown by the historical retirement experience. The gross salvage and gross cost of removal percentages were largely based on the history of the account for the period 1969-2015.

#### Distribution Plant

The composite rate for Distribution Plant decreased from 3.64% to 3.58%. The decrease was mainly caused by increases in the estimated average service life for six Distribution accounts. The Distribution Plant composite rate decrease was partially offset by a decrease in the average service life of three accounts.

#### General Plant

The composite rate for General Plant decreased slightly from 2.83% to 2.68%. The slight decrease is mainly attributable to the decrease in average service life recommended for the AMI Communication Equipment in account 397.16.

## **SCHEDULES**

### SCHEDULE I – Explanation of Columns

Schedule I shows the determination of the recommended annual depreciation accrual rate by primary plant accounts by the straight line remaining life method. An explanation of the schedule follows:

Column I	-	Account number.
Column II	-	Account title.
Column III	-	Original Cost
Column IV	-	Average Life and (Iowa) Curve Type.
Column V	-	Net Salvage Ratio.
Column VI	-	Total to be Recovered (Column III) * (Column V).
Column VII	-	Calculated Depreciation Requirement.
Column VIII	-	Accumulated Depreciation – OPCo's accumulated depreciation by plant account
Column IX	-	Remaining to be Recovered (Column VI - Column VIII).
Column X	-	Whole Life.
Column XI	-	Annual Accrual Amount.
Column XII	-	Accrual Percent (Column XI/Column III).

.



**OHIO POWER COMPANY**  
**CALCULATION OF DISTRIBUTION AND GENERAL PLANT DEPRECIATION RATES BY THE WHOLE LIFE METHOD**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2015**  
**SCHEDULE I - WHOLE LIFE ACCRUAL RATES**  
**(USING TOTAL COMPANY GENERAL EQUIPMENT BALANCES)**

No. (I)	Title (II)	Original Cost (III)	Average Life & Curve Type (IV)	Net Salvage Ratio (V)	Total To Be Recovered (VI)	Calculated Depreciation Requirement (VII)	Accumulated Depreciation (VIII)	Remaining to be Recovered (IX)	Whole Life (Years) (X)	Accrual Amount (XI)	Accrual % (XII)
<b>DISTRIBUTION PLANT</b>											
361.0	Structures & Improvements	20,292,629	65 R3.0	1.15	23,336,523	9,618,234	9,859,416	13,477,107	65.00	359,023	1.77%
362.0	Station Equipment	638,999,564	45 R1.0	1.11	709,289,516	146,810,815	181,172,184	528,117,332	45.00	15,761,989	2.47%
363.0	Storage Battery Equipment	5,069,926	15 SQ	1.00	5,069,926	2,532,902	2,577,107	2,492,819	15.00	337,995	6.67%
364.0	Poles, Towers, & Fixtures	686,925,728	36 R0.5	1.87	1,284,551,111	335,378,965	370,305,932	914,245,179	36.00	35,681,975	5.19%
365.0	Overhead Conductor & Devices	712,761,291	32 L0.0	1.16	826,803,098	164,496,347	159,757,138	667,045,960	32.00	25,837,597	3.63%
366.0	Underground Conduit	222,931,961	64 R2.5	1.00	222,931,961	44,781,279	51,648,078	171,283,883	64.00	3,483,312	1.56%
367.0	Underground Conductor	600,664,266	43 R2.0	1.12	672,743,978	175,172,829	227,299,182	445,444,796	43.00	15,645,209	2.60%
368.0	Line Transformers	735,085,626	30 L0.0	1.14	837,997,614	197,904,512	271,200,884	566,796,730	30.00	27,933,254	3.80%
369.0	Services	320,898,537	41 R0.5	1.34	430,004,040	108,301,689	133,278,899	296,725,141	41.00	10,487,903	3.27%
370.0	Meters	166,643,611	27 S1.0	1.10	183,307,972	42,439,956	12,041,076	171,266,896	27.00	6,789,184	4.07%
370.16	AMI Meters (1)	19,863,795	15 SQ	1.10	21,850,175	6,831,822	11,777,389	10,072,786	15.00	1,456,678	7.33%
371.0	Installations on Custs. Prem.	54,612,001	14 L0.0	1.28	69,903,361	23,582,529	41,078,172	28,825,189	14.00	4,993,097	9.14%
372.0	Leased Property on Custs. Prem.	103,067	40 R0.5	1.00	103,067	57,961	75,000	28,067	40.00	2,577	2.50%
373.0	Street Lighting & Signal Sys.	39,718,084	20 L0.0	1.24	49,250,424	17,276,937	18,932,849	30,317,575	20.00	2,462,521	6.20%
<b>Total Distribution Plant</b>		<u>4,224,570,086</u>			<u>5,337,142,766</u>	<u>1,275,186,777</u>	<u>1,491,003,306</u>	<u>3,846,139,460</u>		<u>151,232,315</u>	<u>3.58%</u>
<b>GENERAL PLANT (Total Company) (2)</b>											
390.0	Structures & Improvements (3)	152,440,736	47 L0.0	1.02	155,489,551	29,439,628	50,255,140	105,234,411	47.00	3,308,288	2.17%
391.0	Office Furniture & Equipment	8,704,359	30 SQ	1.00	8,704,359	3,224,491	4,945,695	3,758,664	30.00	290,145	3.33%
392.0	Transportation Equipment	12,731	50 SQ	1.00	12,731	2,535	2,815	9,916	50.00	255	2.00%
393.0	Stores Equipment	576,299	34 SQ	1.00	576,299	217,045	314,113	262,186	34.00	16,950	2.94%
394.0	Tools Shop & Garage Equipment	38,824,378	30 SQ	1.06	41,153,841	12,792,219	15,681,949	25,471,892	30.00	1,371,795	3.53%
395.0	Laboratory Equipment	350,477	28 SQ	1.00	350,477	210,768	371,723	-21,246	28.00	12,517	3.57%
396.0	Power Operated Equipment	6,768	26 SQ	1.00	6,768	4,818	52,286	-45,518	26.00	260	3.85%
397.0	Communication Equipment	56,531,644	35 SQ	1.00	56,531,644	19,153,019	22,310,737	34,220,907	35.00	1,615,190	2.86%
397.16	AMI Communication Equipment (1)	5,653,464	15 SQ	1.00	5,653,464	1,714,884	3,734,222	1,919,242	15.00	376,898	6.67%
398.0	Miscellaneous Equipment	<u>4,097,429</u>	25 SQ	1.00	<u>4,097,429</u>	<u>1,208,505</u>	<u>1,737,597</u>	<u>2,359,832</u>	25.00	<u>163,897</u>	<u>4.00%</u>
<b>Total General Plant</b>		<u>267,198,285</u>			<u>272,576,563</u>	<u>67,967,912</u>	<u>99,406,277</u>	<u>173,170,286</u>		<u>7,156,195</u>	<u>2.68%</u>
<b>Total Depreciable Plant</b>		<u>4,491,768,371</u>			<u>5,609,719,329</u>	<u>1,343,154,689</u>	<u>1,590,409,583</u>	<u>4,019,309,746</u>		<u>158,388,510</u>	<u>3.53%</u>

N/A = not applicable

**NOTES:** (1) The useful life for AMI Meters and AMI Communication Equipment is 15 years. The net salvage ratio for each account uses the same net salvage ratio calculated for Accounts 370 and 397, respectively.  
(2) Used total company general plant balances at December 31, 2015 for purposes of calculating accrual rates in the Depreciation Study.  
(3) Account 390 excludes the owned structure investment associated with leased buildings.

**OHIO POWER COMPANY**  
**ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE WHOLE LIFE METHOD**  
**SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2015**  
**(USING TOTAL COMPANY GENERAL EQUIPMENT BALANCES)**

NO. (1)	TITLE (2)	ORIGINAL COST AT 12/31/2015 (3)	CURRENT APPROVED RATE (4)	CURRENT ANNUAL ACCRUAL (5)	STUDY RATE (6)	STUDY ACCRUAL (7)	DIFFERENCE (DECREASE) (8)
<b>DISTRIBUTION PLANT</b>							
361.0	Structures & Improvements	20,292,629	2.03%	411,940	1.77%	359,023	-52,917
362.0	Station Equipment	638,999,564	2.90%	18,530,987	2.47%	15,761,989	-2,768,998
363.0	Storage Battery Equipment	5,069,926	6.67%	338,164	6.67%	337,995	-169
364.0	Poles, Towers, & Fixtures	686,925,728	5.34%	36,681,834	5.19%	35,681,975	-999,859
365.0	Overhead Conductor & Devices	712,761,291	3.30%	23,521,123	3.63%	25,837,597	2,316,474
366.0	Underground Conduit	222,931,961	1.79%	3,990,482	1.56%	3,483,312	-507,170
367.0	Underground Conductor	600,664,266	3.39%	20,362,519	2.60%	15,645,209	-4,717,310
368.0	Line Transformers	735,085,626	3.34%	24,551,860	3.80%	27,933,254	3,381,394
369.0	Services	320,898,537	3.54%	11,359,808	3.27%	10,487,903	-871,905
370.0	Meters	166,643,611	3.43%	5,715,876	4.07%	6,789,184	1,073,308
370.16	AMI Meters (1)	19,863,795	14.29%	2,838,536	7.33%	1,456,678	-1,381,858
371.0	Installations on Custs. Prem.	54,612,001	9.63%	5,259,136	9.14%	4,993,097	-266,039
372.0	Leased Property on Custs. Prem.	103,067	3.33%	3,432	2.50%	2,577	-855
373.0	Street Lighting & Signal Sys.	39,718,084	5.40%	2,144,777	6.20%	2,462,521	317,744
	Total Distribution Plant	4,224,570,086	3.69%	155,710,474	3.58%	151,232,314	-4,478,160
<b>GENERAL PLANT (Total Company) (2)</b>							
390.0	Structures & Improvements (3)	152,440,736	2.14%	3,262,232	2.17%	3,308,288	46,056
391.0	Office Furniture & Equipment	8,704,359	3.33%	289,855	3.33%	290,145	290
392.0	Transportation Equipment	12,731	2.00%	255	2.00%	255	0
393.0	Stores Equipment	576,299	2.94%	16,943	2.94%	16,950	7
394.0	Tools Shop & Garage Equipment	38,824,378	3.58%	1,389,913	3.53%	1,371,795	-18,118
395.0	Laboratory Equipment	350,477	3.57%	12,512	3.57%	12,517	5
396.0	Power Operated Equipment	6,768	3.61%	244	3.85%	260	16
397.0	Communication Equipment	56,531,644	2.86%	1,616,805	2.86%	1,615,190	-1,615
397.16	AMI Communication Equipment (1)	5,653,464	14.29%	807,880	6.67%	376,898	-430,982
398.0	Miscellaneous Equipment	4,097,429	4.00%	163,897	4.00%	163,897	0
	Total General Plant	267,198,285	2.83%	7,560,536	2.68%	7,156,195	-404,341
	Total Depreciable Plant	4,491,768,371	3.63%	163,271,010	3.53%	158,388,509	-4,882,501

**NOTES:**

(1) The useful life for AMI Meters and AMI Communication Equipment is 15 years. The net salvage ratio for each account uses the same net salvage ratio calculated for Accounts 370 and 397, respectively.

(2) Used total company general plant balances at December 31, 2015 for purposes of calculating accrual rates in the Depreciation Study.

(3) Account 390 excludes the owned structure investment associated with leased buildings.

**OHIO POWER COMPANY**  
**SCHEDULE III - COMPARISON OF MORTALITY CHARACTERISTICS**  
**DEPRECIATION STUDY AS OF DECEMBER 31, 2015**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
Existing Rates (See Note)						Study Rates					
	Average Service Life (Years)	Iowa Curve	Salvage Factor	Cost of Removal Factor	Net Salvage Factor	Average Service Life (Years)	Iowa Curve	Salvage Factor	Cost of Removal Factor	Net Salvage Factor	
<b><u>DISTRIBUTION PLANT</u></b>											
361.0	Structures & Improvements	57	L1.0	NA	NA	-16%	65	R3.0	9%	24%	-15%
362.0	Station Equipment	40	L1.0	NA	NA	-16%	45	R1.0	18%	29%	-11%
363.0	Storage battery equipment	15	SQ	NA	NA	0%	15	SQ	0%	0%	0%
364.0	Poles, Towers, & Fixtures	35	L1.0	NA	NA	-86%	36	R0.5	9%	96%	-87%
365.0	Overhead Conductor & Devices	35	L0.5	NA	NA	-13%	32	L0.0	19%	35%	-16%
366.0	Underground Conduit	56	R2.5	NA	NA	0%	64	R2.5	0%	0%	0%
367.0	Underground Conductor	36	L1.5	NA	NA	-22%	43	R2.0	3%	15%	-12%
368.0	Line Transformers	34	R1.5	NA	NA	-14%	30	L0.0	19%	33%	-14%
369.0	Services	37	L0.0	NA	NA	-29%	41	R0.5	10%	44%	-34%
370.0	Meters	36	S1.0	NA	NA	-23%	27	S1.0	22%	32%	-10%
370.16	AMI Meters	7	NA	NA	NA	NA	15	SQ	22%	32%	-10%
371.0	Installations on Custs. Prem.	13	L1.5	NA	NA	-20%	14	L0.0	12%	40%	-28%
372.0	Leased Property on Custs. Prem.	30	L0.0	NA	NA	0%	40	R0.5	0%	0%	0%
373.0	Street Lighting & Signal Sys.	22	L0.5	NA	NA	-17%	20	L0.0	14%	38%	-24%
<b><u>GENERAL PLANT</u></b>											
390.0	Structures & Improvements	48	L1.0	NA	NA	-2%	47	L0.0	15%	17%	-2%
391.0	Office Furniture & Equipment	30	SQ	NA	NA	0%	30	SQ	0%	0%	0%
392.0	Transportation Equipment	50	SQ	NA	NA	0%	50	SQ	0%	0%	0%
393.0	Stores Equipment	34	SQ	NA	NA	0%	34	SQ	0%	0%	0%
394.0	Tools Shop & Garage Equipment	30	SQ	NA	NA	-7%	30	SQ	7%	13%	-6%
395.0	Laboratory Equipment	28	SQ	NA	NA	0%	28	SQ	0%	0%	0%
396.0	Power Operated Equipment	26	SQ	NA	NA	6%	26	SQ	0%	0%	0%
397.0	Communication Equipment	35	SQ	NA	NA	0%	35	SQ	0%	0%	0%
397.16	AMI Communication Equipment	7	NA	NA	NA	NA	15	SQ	0%	0%	0%
398.0	Miscellaneous Equipment	25	SQ	NA	NA	0%	25	SQ	0%	0%	0%

Note: Existing Rate mortality characteristics are from Case Nos. 11-351-EL-AIR and 11-352-EL-AIR effective January 1, 2012. CSP mortality statistics were selected for the "Existing Rates" Average Service Life and Iowa Curve presentation since CSP had a larger amount of total plant at December 31, 2009. The Existing Rates "Net Salvage Factor" is an average of CSP and OPCo Net Salvage Factors from the 2009 depreciation studies.

NA = Not Available

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**11/29/2016 11:56:59 AM**

**in**

**Case No(s). 13-2385-EL-SSO, 13-2386-EL-AAM**

Summary: Correspondence -Updated Depreciation Study on Behalf of Ohio Power Company  
electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company