

**KENTUCKY POWER COMPANY**

**DEPRECIATION STUDY REPORT**

**OF**

**ELECTRIC PLANT IN SERVICE**

**AT**

**DECEMBER 31, 2013**

## DEPRECIATION STUDY REPORT

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## **I. INTRODUCTION**

This report presents the results of a depreciation study of Kentucky Power Company's (KPCo) depreciable electric utility plant in service at December 31, 2013. The study was prepared by David A. Davis, Manager – Property Accounting Policy and Research at American Electric Power Service Corporation (AEPSC). The purpose of the depreciation study was to develop appropriate annual depreciation accrual rates for each of the primary plant accounts that comprise the functional groups for which KPCo computes its annual depreciation expense.

The recommended depreciation rates are based on the Average Remaining Life Method of computing depreciation. Further explanation of this method is contained in Section II of this report.

The definition of depreciation used in my Study is the same as that used by the Federal Energy Regulatory Commission (FERC) and the National Association of Regulatory Utility Commissioners:

"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 recommended depreciation accrual rates by primary plant accounts and composited to functional plant classifications. Schedule II compares depreciation expense using rates approved by the Commission and rates recommended by the depreciation study. Schedule III shows a comparison of the current mortality characteristics that were used to compute the recommended depreciation rates and the mortality characteristics used to determine the existing depreciation rates and accruals for Transmission, Distribution and General Plant Functions. A comparison of KPCo's current functional group composite depreciation rates and accruals to recommended functional group rates and accruals based on December 31, 2013 depreciable plant balances follows:

**Table 1 - Depreciation Rates and Accruals**  
 Based on Depreciable Plant In Service at December 31, 2013

<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>	
Steam Production (1)	3.80%	54,851,796	3.36%	48,418,617	(6,433,179)
Transmission	1.71%	8,478,288	2.66%	13,169,805	4,691,517
Distribution	3.52%	24,312,736	4.48%	30,971,933	6,659,197
General	2.54%	858,462	4.42%	1,492,241	633,779
Total Depreciable Plant	3.32%	88,501,282	3.50%	94,052,596	5,551,314

Note: (1) Includes Big Sandy and Mitchell plants. The Company is not recommending a change in depreciation rates for Big Sandy Plant due to the planned retirement of Unit 2 in 2015 and the coal related portions of Unit 1 in 2016.

Based on Total Company Depreciable Plant In-Service as of December 31, 2013, I am recommending an increase in depreciation rates that result in an increase in annual depreciation expense of \$5,551,314. The depreciation rate changes are necessary because of changes in average service lives and net salvage estimates used to calculate KPCo's recommended depreciation rates that takes into account the December 31, 2013 transfer of a 50% undivided interest in the Mitchell generating station from AEP affiliate Ohio Power Company as approved by the Kentucky Public Service Commission (or Commission) in Case No. 2012-00578. KPCo's current approved depreciation rates with the exception of Mitchell Plant rates are based on a 1991 settlement agreement in Case No. 91-066 and were made effective on April 1, 1991. The Stipulation and Settlement Agreement in Case No. 2012-00578 ordered Kentucky Power to use the current Ohio Power Company depreciation rates for Mitchell Plant until such rates are changed in a base rate case.

## **II. 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 as 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. Annual Depreciation Rates Using the Average Remaining Life Method

KPCo's current depreciation rates are based on the Average Remaining Life Method. The Average Remaining Life Method recovers the original cost of the plant, adjusted for net salvage, less accumulated depreciation, over the average remaining life of the plant. By this method, the annual depreciation rate for each account is determined on the following basis:

$$\text{Annual Depreciation Expense} = \frac{(\text{Orig. Cost}) (\text{Net Salvage Ratio}) - \text{Accumulated Depreciation}}{\text{Average Remaining Life}}$$

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

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. These methods are identified and described as follows:

Life Span Analysis

The life span analysis was employed for Mitchell Plant. The life-span method of analysis is particularly suited to specific location property, such as generating plants, where all of the surviving investments are likely to be retired in total at a future date. The key elements in the life span

analysis are the age of the surviving investments, the projected retirement date of the facility and the expected interim retirements. Interim retirements are those retirements that are expected to occur between the date of the depreciation study and the expected final retirement date of the generating plant. Examples of interim retirements include fans, pumps, motors, a set of boiler tubes, a turbine rotor, etc. The interim retirement history for each primary production plant account was analyzed and the results of those analyses were used to project future interim retirements. The age of Mitchell Plant's surviving investments at December 31, 2013 was obtained from the accounting records of affiliate Ohio Power Company (OPCo). American Electric Power Service Corporation (AEPSC) provided the retirement date used in the life-span analysis for Mitchell Plant.

The Company is not recommending any revision to Big Sandy Plant's depreciation rates in this filing since Unit 2 is planned for retirement at the end of May 2015 and the coal related portions of Unit 1 are planned for retirement in April 2016. KPCo expects to repower Big Sandy Unit 1 to use natural gas in 2016.

The order in the Mitchell transfer Case No. 2012-00578 allows Kentucky Power to recover the coal-related retirement costs of Big Sandy Unit 1, the retirement costs of Big Sandy Unit 2 and other site related retirement costs that will not continue in use. New depreciation rates will be required for Big Sandy Unit 1 after it is repowered to use natural gas in 2016.

#### Steam Production Plant

At December 31<sup>st</sup>, 2013, KPCo's depreciable investment in Steam

Production Plant includes the Big Sandy Generating plant and a 50% undivided interest in Mitchell Generation Plant. The Big Sandy plant is located highway 23 near Louisa, Kentucky and includes two generating units. The Mitchell Plant is located on the Ohio River near Moundsville, West Virginia and also consists of two generating units. All generating units at the Big Sandy and Mitchell plants are currently coal fired.

The generating units and their capacities are as follows (also shown on Schedule IV – Estimated Generation Plant Retirement Dates):

<u>Plant</u>	<u>Unit</u>	<u>Rating</u>	<u>Commercial Operating Date</u>
Big Sandy	1	260 MW	1963
Big Sandy	2	800 MW	1969
Mitchell	1	770 MW	1971
Mitchell	2	790 MW	1971

AEPSC evaluated each of the generating units and determined the following retirement dates for the units:

<u>Plant</u>	<u>Unit</u>	<u>Retirement Date</u>
Big Sandy	2	2015
Big Sandy	1	2016 coal related portion
Big Sandy	1	2031 repowered to use natural gas
Mitchell Plant	1,2	2040

Since KPCo's last depreciation study (property investment dated December 31, 2008), AEP has reevaluated the expected retirement dates for its generation plant including Big Sandy Units 1-2. The reevaluation for these two Big Sandy units indicated that their current estimated retirement



dates should be 2015 for Big Sandy Unit 2, 2016 for the coal related portion of Big Sandy Unit 1 and 2031 for Big Sandy Unit 1 after it is repowered to use natural gas. AEP previously estimated individual unit retirement dates of 2023 for Unit 1 and 2029 for Unit 2. According to AEP, the earlier Big Sandy Unit 2 and the coal related portion of Unit 1 retirement dates are because it is not economically feasible to equip the units with necessary environmental controls, not because they have reached the end of their service lives.

Current plans are for the Mitchell Plant to operate for a total life of 69 years or until 2040.

#### Actuarial Analysis – Transmission, Distribution and General Plant

This method of analyzing past experience represents the application to industrial 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.

The Actuarial Method of Life Analysis was used for the following accounts:

- 352.0 Transmission Structures & Improvements
- 353.0 Transmission Station Equipment
- 361.0 Distribution Structures & Improvements
- 362.0 Distribution Station Equipment
- 390.0 General Structures & Improvements

The result of the actuarial analysis for the above accounts is detailed in the depreciation study work papers.

#### Simulated Plant Record Analysis – Transmission and Distribution Plant

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 using the Balance Method is shown in the depreciation study work papers. The analysis also shows the value of the Index of Variation of the difference that is calculated according to the the Balances Method where a lower value for the Index of Variation indicates better agreement with the actual data.

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

- 354.0 Transmission Towers & Fixtures
- 355.0 Transmission Poles & Fixtures
- 356.0 Transmission Overhead Conductor & Devices
- 364.0 Distribution Poles, Towers & Fixtures
- 365.0 Distribution OH Conductor & Devices
- 366.0 Distribution Underground Conduit
- 367.0 Distribution Underground Conductor & Devices
- 368.0 Distribution Line Transformers
- 369.0 Distribution Services
- 370.0 Distribution Meters

371.0 Installation on Customers Premises

373.0 Street Lighting & Signal Systems

### 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, my recommendation for these accounts is that the current useful life approved by the Commission be retained and used to continue amortization of the account balances.

#### 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.

### **III. NET SALVAGE**

#### 1. Net Salvage - Steam Production Plant

The net salvage analysis for steam production plant included a review of the plant's experienced functional interim retirement, salvage and removal history for the period 2001-2013. No interim retirements were estimated for Big Sandy Plant in this depreciation study since Unit 2 is estimated to retire in 2015, the coal

related portions of Unit 1 are estimated to retire in 2016 and the repowered Unit 1 (to use natural gas) is expected to retire in 2031.

While a standard type of analysis was used by the depreciation study to determine the net salvage characteristics applicable to interim retirements for the plants, the most significant net salvage amounts for generating plants occurs at the end of their life. Therefore, to assist in establishing total net salvage applicable to Big Sandy and Mitchell plants, the Company contracted with Sargent & Lundy (S&L) to prepare conceptual demolition cost estimates. The S&L cost estimates to demolish the plants are based on current (2013) price levels which were inflated to retirement dates in the depreciation study. These estimates were incorporated into the calculation of a net salvage ratio for Steam Production Plant. S&L's demolition costs do not include Asset Retirement Obligation (ARO) amounts associated with the removal of asbestos or any cost associated with the final disposition of Big Sandy or Mitchell Plant landfills and ash ponds. The costs to remove asbestos and cover ash ponds are included separately in the cost of service through the accounting for asset retirement obligations.

## 2. Net Salvage – Transmission, Distribution and General Plant

The net salvage percentages used in this report for Transmission, Distribution and General Plant are expressed as percent of original cost and are based on the Company's experience combined with the judgment of the analyst. KPCo maintains salvage and removal costs in its depreciation ledger at the functional plant level, rather than by primary plant accounts. To determine gross salvage, gross removal and net salvage percentages for individual plant accounts, original cost retirements, salvage and removal were taken from the Company's account history in its PowerPlant software which detailed these

amounts by account for the period 2000 to 2013. Gross salvage and cost of removal percentages were calculated using the data from this fourteen year time period for each account. The salvage and removal percentages for each account were then netted to determine a net salvage percentage for each account.

The net salvage percents were converted to net salvage ratios (1 minus the net salvage percentage) and appear in Column IV 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, which was used to allocate accumulated depreciation at the functional group to the accounts comprising each group.

5. Net Salvage – Ratios

The net salvage ratios shown 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.

#### **IV. CALCULATION OF DEPRECIATION REQUIREMENT AT DECEMBER 31, 2013**

The accumulated depreciation by functional group was allocated to individual plant accounts based on the calculation of a depreciation requirement (theoretical reserve) for each plant account using the average service life, curve type and net salvage amount recommended in this study.

#### **V. STUDY RESULTS**

Production, Transmission, Distribution and General plant results are discussed below. In addition, Transmission, Distribution and General Plant average service life, retirement dispersion pattern and net salvage percentages used to calculate each primary plant account depreciation rate are shown on Schedule III where the mortality characteristics and net salvage values for the current rates are also shown. The changes to the mortality characteristics follow trends shown by historical retirement experience. Gross salvage and gross cost of removal percentages were largely based on the history of each account for the period 2000-2013.

#### **Steam Production Plant**

Depreciation rates for Mitchell Plant were calculated by plant account with the expectation that the total cost including net salvage would be recovered by 2040 which is the estimated retirement date for Mitchell Plant. New depreciation rates for Big Sandy Plant were not recommended by the depreciation study. The comparison of steam production depreciation accruals on Schedule II using the currently approved depreciation rates and the study depreciation rates includes



Mitchell Plant. The original cost and accumulated depreciation amounts used for Mitchell Plant are 50% of the plant's original cost and accumulated depreciation on KPCo's books at December 31, 2013.

The decrease in steam production depreciation expense due to a change in depreciation rates was primarily due to the longer life estimate for Mitchell Plant in this proceeding (2040 retirement date) versus a previously estimated 2031 retirement date. The depreciation study doesn't recommend any changes to the Big Sandy Plant's depreciation rates.

Terminal demolition costs are included in the steam production depreciation rates. The estimates of demolition costs were developed by Sargent & Lundy. S&L estimated demolition cost in 2013 dollars for Big Sandy Plant and Mitchell Plant (KPCo's 50% share) was \$28,831,786 and \$21,185,697, respectively.

#### Transmission Plant

The depreciation rates for Transmission plant increased from 1.71% to 2.66% due to increases in the net salvage ratio for five accounts (accounts 352, 353, 354, 355 and 356) and decreases in the average service life for two accounts (accounts 354, and 355). The increase was partially offset by an increase in the average service life for account 352.

#### Distribution Plant

The depreciation rates for Distribution plant increased from 3.52% to 4.48% due to increases in the net salvage ratio for nine accounts (accounts 361, 362, 364, 365, 367, 368, 369, 371 and 373) and a decrease in the average service life for one account (account 370). The increase was partially offset by a decrease in the net salvage ratio for account 370 and by increases in the

average service life for five accounts (accounts 361, 362, 366, 369 and 373).

### General Plant

The depreciation rates for General plant increased from 2.54% to 4.42% due to increases in the net salvage ratio for three accounts (accounts 391, 394 and 398) and a reduction in the average service life for account 390. The increase was partially offset by a decrease in the net salvage ratio for account 397.

## **SCHEDULE I – EXPLANATION OF COLUMN HEADINGS**

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 at December 31, 2013
Column IV	-	Net Salvage Ratio.
Column V	-	Total to be Recovered (Column III) * (Column IV).
Column VI	-	Calculated Depreciation Requirement.
Column VII	-	Allocated Accumulated Depreciation – accumulated depreciation (book reserve) spread to each account on the basis of the Calculated Depreciation Requirement shown in Column VI.
Column VIII	-	Remaining to be Recovered (Column V - Column VII).
Column IX	-	Average Remaining Life.
Column X	-	Recommended Annual Accrual Amount.
Column XI	-	Recommended Annual Accrual Percent or Depreciation Rate (Column X/Column III).

**KENTUCKY POWER COMPANY**  
**SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2013**  
**AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES**

Acct. No.	Account Title	Original Cost	Net Salvg. Ratio	Total to be Recovered	Calculated Depreciation Requirement	Accumulated Depreciation	Remaining to Be Recovered	Avg. Remain Life	Annual Accrual	
									Amount	Percent
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)
<b>STEAM PRODUCTION PLANT</b>										
<b>Big Sandy Plant (1)</b>										
311	Structures & Improvements	43,291,665	(1)	(1)	(1)	30,726,379	(1)	(1)	1,636,425	3.78%
312	Boiler Plant Equipment	362,456,070	(1)	(1)	(1)	177,325,748	(1)	(1)	13,700,839	3.78%
312	Boiler Plant Equip SCR Catalyst (2)	8,147,622	(1)	(1)	(1)	5,742,300	(1)	(1)	389,456	4.78%
314	Turbogenerator Units	109,522,949	(1)	(1)	(1)	61,149,688	(1)	(1)	4,139,967	3.78%
315	Accessory Electrical Equip.	16,513,202	(1)	(1)	(1)	12,896,303	(1)	(1)	624,199	3.78%
316	Misc. Power Plant Equip.	8,709,178	(1)	(1)	(1)	5,351,493	(1)	(1)	329,207	3.78%
	<b>Total</b>	<b>548,640,686</b>				<b>293,191,911</b>			<b>20,820,093</b>	<b>3.79%</b>
<b>Mitchell Plant (3)</b>										
311	Structures & Improvements	42,000,197	1.07	44,940,211	18,282,178	16,183,402	28,756,809	25.01	1,149,812	2.74%
312	Boiler Plant Equipment	765,644,984	1.07	819,240,133	245,324,500	238,518,432	580,721,701	24.25	23,947,287	3.13%
312	Boiler Plant Equip SCR Catalyst (2)	8,190,115	1.00	8,190,115	4,023,394	2,378,493	5,811,622	4.07	1,023,764	12.50%
314	Turbogenerator Units	53,295,697	1.07	57,026,396	29,106,660	33,613,523	23,412,873	23.84	982,084	1.84%
315	Accessory Electrical Equip.	17,080,672	1.07	18,276,319	9,466,086	11,043,285	7,233,034	25.81	280,242	1.64%
316	Misc. Power Plant Equip.	7,693,412	1.07	8,231,951	3,289,590	3,072,520	5,159,431	23.96	215,335	2.80%
	<b>Total</b>	<b>893,905,077</b>	<b>1.07</b>	<b>955,905,125</b>	<b>309,492,408</b>	<b>304,809,655</b>	<b>651,095,470</b>	<b>23.59</b>	<b>27,598,524</b>	<b>3.09%</b>
	<b>Total Steam Prod. Plant</b>	<b>1,442,545,763</b>	<b>0.66</b>	<b>955,905,125</b>	<b>309,492,408</b>	<b>598,001,566</b>	<b>651,095,470</b>	<b>13.45</b>	<b>48,418,617</b>	<b>3.36%</b>
<b>TRANSMISSION PLANT</b>										
350.1	Land Rights	26,456,147	1.00	26,456,147	8,498,622	7,016,166	19,439,981	50.91	381,850	1.44%
352	Structures & Improvements	6,636,668	1.10	7,300,335	3,172,075	2,618,754	4,681,581	33.93	137,978	2.08%
353	Station Equipment	170,843,671	1.03	175,968,981	34,476,675	28,462,741	147,506,240	40.20	3,669,309	2.15%
354	Towers & Fixtures	94,517,543	1.10	103,969,297	56,679,229	46,792,396	57,176,901	23.20	2,464,522	2.61%
355	Poles & Fixtures	74,696,720	1.61	120,261,719	28,658,583	23,659,527	96,602,192	32.75	2,949,685	3.95%
356	OH Conductor & Devices	122,537,908	1.27	155,623,143	70,585,347	58,272,803	97,350,340	27.32	3,563,336	2.91%
357	Undergrnd Conduit	11,590	1.00	11,590	4,345	3,587	8,003	23.13	346	2.99%
358	Undergrnd Conductor	106,066	1.00	106,066	49,568	40,922	65,144	23.44	2,779	2.62%
	<b>Total Transmission Plant</b>	<b>495,806,313</b>	<b>1.19</b>	<b>589,697,279</b>	<b>202,124,444</b>	<b>166,866,896</b>	<b>422,830,383</b>	<b>32.11</b>	<b>13,169,805</b>	<b>2.66%</b>
<b>DISTRIBUTION PLANT</b>										
360.1	Land Rights	5,343,520	1.00	5,343,520	1,411,791	1,371,633	3,971,887	55.18	71,981	1.35%
361	Structures & Improvements	4,372,006	1.12	4,896,647	1,354,850	1,316,312	3,580,335	50.63	70,716	1.62%
362	Station Equipment	83,664,562	1.07	89,521,081	18,549,279	18,021,648	71,499,433	26.16	2,733,159	3.27%
364	Poles, Towers, & Fixtures	180,551,331	1.30	234,716,730	68,606,654	66,655,150	168,061,580	19.82	8,479,394	4.70%
365	OH Conductor & Devices	179,538,721	0.94	168,766,398	33,083,601	32,142,543	136,623,855	20.90	6,537,027	3.64%
366	Underground Conduit	6,377,091	1.00	6,377,091	1,464,955	1,423,285	4,953,806	34.66	142,926	2.24%
367	Underground Conductor	9,812,956	1.13	11,088,640	1,655,544	1,608,452	9,480,188	37.43	253,278	2.58%
368	Line Transformers	119,012,919	1.01	120,203,048	28,150,578	27,349,840	92,853,208	19.15	4,848,731	4.07%
369	Services	53,900,363	1.38	74,382,501	17,054,558	16,569,444	57,813,057	15.41	3,751,658	6.96%
370	Meters	24,723,287	0.97	23,981,588	10,273,269	9,981,048	14,000,540	9.72	1,440,385	5.83%
371	Installations on Custs. Prem.	20,056,550	1.32	26,474,646	7,344,863	7,135,939	19,338,707	7.95	2,432,542	12.13%
373	Street Lighting & Signal Sys.	3,349,341	1.24	4,153,183	1,231,600	1,196,567	2,956,616	14.07	210,136	6.27%
	<b>Total Distribution Plant</b>	<b>690,702,647</b>	<b>1.11</b>	<b>769,905,074</b>	<b>190,181,542</b>	<b>184,771,861</b>	<b>585,133,213</b>	<b>18.89</b>	<b>30,971,931</b>	<b>4.48%</b>

**KENTUCKY POWER COMPANY**  
**SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2013**  
**AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES**

Acct. No.	Account Title	Original Cost	Net Salvg. Ratio	Total to be Recovered	Calculated Depreciation Requirement	Accumulated Depreciation	Remaining to Be Recovered	Avg. Remain Life	Annual Accrual	
									Amount	Percent
(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)
<b>GENERAL PLANT</b>										
389.1	Land Rights	37,384	1.00	37,384	11,898	6,909	30,475	51.13	596	1.59%
390	Structures & Improvements	19,811,669	1.00	19,811,669	9,535,669	5,537,254	14,274,415	18.15	786,469	3.97%
391	Office Furniture & Equipment	1,683,333	1.00	1,683,333	377,310	219,100	1,464,233	27.15	53,931	3.20%
392	Transportation Equipment	14,768	1.00	14,768	1,742	1,012	13,756	26.46	520	3.52%
393	Stores Equipment	164,548	1.00	164,548	60,496	35,129	129,419	18.97	6,822	4.15%
394	Tools Shop & Garage Equip.	3,553,696	1.09	3,873,529	1,042,908	605,604	3,267,925	21.92	149,084	4.20%
395	Laboratory Equipment	141,765	1.00	141,765	89,929	52,221	89,544	10.97	8,163	5.76%
396	Power Operated Equipment	5,931	1.00	5,931	2,728	1,584	4,347	13.50	322	5.43%
397	Communication Equipment	7,318,955	0.97	7,099,386	2,872,871	1,668,243	5,431,143	13.10	414,591	5.66%
398	Miscellaneous Equipment	<u>1,065,616</u>	1.03	<u>1,097,584</u>	<u>464,407</u>	<u>269,676</u>	<u>827,908</u>	11.54	<u>71,743</u>	6.73%
<b>Total General Plant</b>		<u>33,797,665</u>	<b>1.00</b>	<u>33,929,897</u>	<u>14,459,958</u>	<u>8,396,732</u>	<u>25,533,165</u>	17.11	<u>1,492,241</u>	4.42%
<b>Total Depreciable Plant</b>		<u>2,662,852,388</u>		<u>2,349,437,375</u>	<u>716,258,352</u>	<u>958,037,055</u>	<u>1,684,592,231</u>		<u>94,052,594</u>	<u>3.53%</u>

N/A = Not Applicable

Notes:

(1) The Company plans to retire Big Sandy Unit 2 at the end of May 2015 and the coal related portions of Unit 1 in 2016. Since the Commission authorized (Case No. 2012-00578) the Company to recover the coal-related portion of Big Sandy Unit 1, the retirement costs of Big Sandy Unit 2 and any other site related retirement costs, this depreciation recommends that the existing approved depreciation rates for Big Sandy Plant be retained until a future proceeding that includes the remaining portion of Big Sandy Unit 1 and the cost to re-power this unit to use natural gas.

(2) An annualized depreciation rate for Big Sandy Plant's SCR Catalyst was calculated using currently approved rates and included in the above analysis. A separate depreciation rate was calculated for Mitchell Plant's SCR Catalyst using AEP Air Emissions Control estimated average life for the catalyst.

(3) Mitchell Plant cost at December 31, 2013. At December 31, 2013 the Mitchell Plant was jointly owned 50% by Kentucky Power Company and 50% by AEP Generating Resources and therefore the cost shown above is 50% of the total Mitchell Plant depreciable plant in service. The Mitchell Plant cost includes 50% of the investment in the gypsum plant underloader located at the Mountaineer Generating Station.

**KENTUCKY POWER COMPANY**  
**SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES**  
**ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE REMAINING LIFE METHOD**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2013**

ACCT. NO. (1)	ACCOUNT TITLE (2)	ORIGINAL COST (3)	CURRENT APPROVED RATE (4)	ANNUAL ACCRUAL (5)	STUDY RATE (6)	STUDY ACCRUAL (7)	DIFFERENCE (DECREASE) (8)
<b>STEAM PRODUCTION PLANT</b>							
<b>BIG SANDY PLANT (a)</b>							
311	Structures & Improvements	43,291,665	3.78%	1,636,425	3.78%	1,636,425	0
312	Boiler Plant Equipment	362,456,070	3.78%	13,700,839	3.78%	13,700,839	0
312	Boiler Plant Equip SCR Catalyst	8,147,622	4.78%	389,456	4.78%	389,456	0
314	Turbogenerator Units	109,522,949	3.78%	4,139,967	3.78%	4,139,967	0
315	Accessory Electrical Equipment	16,513,202	3.78%	624,199	3.78%	624,199	0
316	Misc. Power Plant Equip.	<u>8,709,178</u>	3.78%	<u>329,207</u>	3.78%	<u>329,207</u>	<u>0</u>
	Total	<u>548,640,686</u>	3.79%	<u>20,820,093</u>	3.79%	<u>20,820,093</u>	<u>0</u>
<b>MITCHELL PLANT - (b)</b>							
311	Structures & Improvements	42,000,197	2.87%	1,205,406	2.74%	1,149,812	(55,594)
312	Boiler Plant Equipment	765,644,984	3.90%	29,860,154	3.13%	23,947,287	(5,912,867)
312	Boiler Plant Equip SCR Catalyst (c)	8,190,115	10.00%	819,012	12.50%	1,023,764	204,752
314	Turbogenerator Units	53,295,697	2.86%	1,524,257	1.84%	982,084	(542,173)
315	Accessory Electrical Equipment	17,080,672	2.39%	408,228	1.64%	280,242	(127,986)
316	Misc. Power Plant Equip.	<u>7,693,412</u>	2.79%	<u>214,646</u>	2.80%	<u>215,335</u>	<u>689</u>
	Total	<u>893,905,077</u>	3.81%	<u>34,031,703</u>	3.09%	<u>27,598,524</u>	<u>(6,433,179)</u>
	<b>Total Steam Production Plant</b>	<b><u>1,442,545,763</u></b>	<b>3.80%</b>	<b><u>54,851,796</u></b>	<b>3.36%</b>	<b><u>48,418,617</u></b>	<b><u>(6,433,179)</u></b>
<b>TRANSMISSION PLANT</b>							
350.1	Land Rights	26,456,147	1.71%	452,400	1.44%	381,850	(70,550)
352	Structures & Improvements	6,636,668	1.71%	113,487	2.08%	137,978	24,491
353	Station Equipment	170,843,671	1.71%	2,921,427	2.15%	3,669,309	747,882
354	Towers & Fixtures	94,517,543	1.71%	1,616,250	2.61%	2,464,522	848,272
355	Poles & Fixtures	74,696,720	1.71%	1,277,314	3.95%	2,949,685	1,672,371
356	OH Conductor & Devices	122,537,908	1.71%	2,095,398	2.91%	3,563,336	1,467,938
357	Underground Conduit	11,590	1.71%	198	2.99%	346	148
358	Underground Conductor & Devices	<u>106,066</u>	1.71%	<u>1,814</u>	2.62%	<u>2,779</u>	<u>965</u>
	<b>Total Transmission Plant</b>	<b><u>495,806,313</u></b>	<b>1.71%</b>	<b><u>8,478,288</u></b>	<b>2.66%</b>	<b><u>13,169,805</u></b>	<b><u>4,691,517</u></b>
<b>DISTRIBUTION PLANT</b>							
360.1	Land Rights	5,343,520	3.52%	188,092	1.35%	71,981	(116,111)
361	Structures & Improvements	4,372,006	3.52%	153,895	1.62%	70,716	(83,179)
362	Station Equipment	83,664,562	3.52%	2,944,993	3.27%	2,733,159	(211,834)
364	Poles, Towers, & Fixtures	180,551,331	3.52%	6,355,407	4.70%	8,479,394	2,123,987
365	Overhead Conductor & Devices	179,538,721	3.52%	6,319,763	3.64%	6,537,027	217,264
366	Underground Conduit	6,377,091	3.52%	224,474	2.24%	142,926	(81,548)
367	Underground Conductor	9,812,956	3.52%	345,416	2.58%	253,278	(92,138)
368	Line Transformers	119,012,919	3.52%	4,189,255	4.07%	4,848,731	659,476
369	Services	53,900,363	3.52%	1,897,293	6.96%	3,751,658	1,854,365
370	Meters	24,723,287	3.52%	870,260	5.83%	1,440,385	570,125
371	Installations on Custs. Prem.	20,056,550	3.52%	705,991	12.13%	2,432,542	1,726,551
373	Street Lighting & Signal Sys.	<u>3,349,341</u>	3.52%	<u>117,897</u>	6.27%	<u>210,136</u>	<u>92,239</u>
	<b>Total Distribution Plant</b>	<b><u>690,702,647</u></b>	<b>3.52%</b>	<b><u>24,312,736</u></b>	<b>4.48%</b>	<b><u>30,971,933</u></b>	<b><u>6,659,197</u></b>

**KENTUCKY POWER COMPANY**  
**SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES**  
**ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE REMAINING LIFE METHOD**  
**BASED ON PLANT IN SERVICE AT DECEMBER 31, 2013**

ACCT. NO. (1)	ACCOUNT TITLE (2)	ORIGINAL COST (3)	CURRENT APPROVED RATE (4)	ANNUAL ACCRUAL (5)	STUDY RATE (6)	STUDY ACCRUAL (7)	DIFFERENCE (DECREASE) (8)
<b>GENERAL PLANT</b>							
389.1	Land Rights	37,384	2.54%	950	1.59%	596	(354)
390	Structures & Improvements	19,811,669	2.54%	503,216	3.97%	786,469	283,253
391	Office Furniture & Equipment	1,683,333	2.54%	42,757	3.20%	53,931	11,174
392	Transportation Equipment	14,768	2.54%	375	3.52%	520	145
393	Stores Equipment	164,548	2.54%	4,180	4.15%	6,822	2,642
394	Tools Shop & Garage Equipment	3,553,696	2.54%	90,264	4.20%	149,084	58,820
395	Laboratory Equipment	141,765	2.54%	3,601	5.76%	8,163	4,562
396	Power Operated Equipment	5,931	2.54%	151	5.43%	322	171
397	Communication Equipment	7,318,955	2.54%	185,901	5.66%	414,591	228,690
398	Miscellaneous Equipment	<u>1,065,616</u>	2.54%	<u>27,067</u>	6.73%	<u>71,743</u>	<u>44,676</u>
	<b>Total General Plant</b>	<b><u>33,797,665</u></b>	<b>2.54%</b>	<b><u>858,462</u></b>	<b>4.42%</b>	<b><u>1,492,241</u></b>	<b><u>633,779</u></b>
	<b>Total Depreciable Plant</b>	<b><u>2,662,852,388</u></b>	<b>3.32%</b>	<b><u>88,501,282</u></b>	<b>3.53%</b>	<b><u>94,052,596</u></b>	<b><u>5,551,314</u></b>

**Notes:**

- (a) The depreciation study recommends that the current approved depreciation rates for Big Sandy Plant remain in effect until the next base case which will reflect the retirement of Big Sandy Unit 2 in 2015, the coal related portions of Unit 1 in 2016 and the cost to re-power Unit 1 to burn natural gas. Therefore there is no change in depreciation expense due to a change in depreciation rates for Big Sandy Plant.
- (b) The current approved rates for Mitchell Generating Plant are from AEP affiliated company, Ohio Power Company as per the Order in Case No. 2012-00578.
- (c) The depreciation rate was revised for the SCR catalyst at Mitchell Generating Station using AEP Generation's estimated average life for the catalyst of 8 years.

**KENTUCKY POWER COMPANY  
SCHEDULE III - COMPARISON OF MORTALITY CHARACTERISTICS  
DEPRECIATION STUDY AS OF DECEMBER 31, 2013**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
	<u>Existing Rates (See note, below)</u>					<u>Current Study Rates</u>					
	Average		Cost of	Net		Average		Cost of	Net		
	Service	Iowa	Salvage	Removal	Salvage	Service	Iowa	Salvage	Removal	Salvage	
	<u>Life</u>	<u>Curve</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>	<u>Life</u>	<u>Curve</u>	<u>Factor</u>	<u>Factor</u>	<u>Factor</u>	
	(Years)					(Years)					
<b><u>TRANSMISSION PLANT</u></b>											
350.1	Rights of Way	75	R4.0	N/A	N/A	0%	75	R4.0	0%	0%	0%
352.0	Structures & Improvements	55	S1.5	N/A	N/A	0%	60	S3.0	0%	10%	-10%
353.0	Station Equipment	50	R0.5	N/A	N/A	25%	50	L0.5	8%	11%	-3%
354.0	Towers & Fixtures	55	R4.0	N/A	N/A	0%	51	S6.0	3%	13%	-10%
355.0	Poles & Fixtures	45	R3.0	N/A	N/A	0%	43	L3.0	2%	63%	-61%
356.0	Overhead Conductor & Devices	50	R3.0	N/A	N/A	10%	50	S6.0	6%	33%	-27%
357.0	Underground Conduit	37	R2.0	N/A	N/A	0%	37	R2.0	0%	0%	0%
358.0	Underground Conductor and Devices	44	R1.0	N/A	N/A	0%	44	R1.0	0%	0%	0%
<b><u>DISTRIBUTION PLANT</u></b>											
360.1	Rights of Way	75	R4.0	N/A	N/A	0%	75	R4.0	0%	0%	0%
361.0	Structures & Improvements	65	L0.5	N/A	N/A	0%	70	R2.0	4%	16%	-12%
362.0	Station Equipment	25	L0.0	N/A	N/A	25%	33	R0.5	10%	17%	-7%
364.0	Poles, Towers, & Fixtures	28	L0.0	N/A	N/A	25%	28	R0.5	18%	48%	-30%
365.0	Overhead Conductor & Devices	26	R1.5	N/A	N/A	25%	26	L0.0	30%	24%	6%
366.0	Underground Conduit	37	R2.0	N/A	N/A	0%	45	R3.0	0%	0%	0%
367.0	Underground Conductor	44	R1.0	N/A	N/A	0%	44	R0.5	1%	14%	-13%
368.0	Line Transformers	25	R1.5	N/A	N/A	15%	25	L0.0	29%	30%	-1%
369.0	Services	18	R2.0	N/A	N/A	0%	20	L0.0	1%	39%	-38%
370.0	Meters	27	R0.5	N/A	N/A	0%	17	R4.0	22%	19%	3%
371.0	Installations on Custs. Prem.	11	L0.0	N/A	N/A	30%	11	L0.0	1%	33%	-32%
373.0	Street Lighting & Signal Sys.	15	L0.0	N/A	N/A	15%	20	L0.0	1%	25%	-24%
<b><u>GENERAL PLANT</u></b>											
389.1	Rights of Way	75	R4.0	N/A	N/A	0%	75	R4.0	0%	0%	0%
390.0	Structures & Improvements	45	L3.0	N/A	N/A	0%	35	L2.0	1%	1%	0%
391.0	Office Furniture & Equipment	35	R0.5	N/A	N/A	10%	35	SQ	0%	0%	0%
392.0	Transportation Equipment	30	R3.0	N/A	N/A	0%	30	SQ	0%	0%	0%
393.0	Stores Equipment	30	R1.0	N/A	N/A	0%	30	SQ	0%	0%	0%
394.0	Tools Shop & Garage Equipment	30	R0.5	N/A	N/A	0%	30	SQ	0%	9%	-9%
395.0	Laboratory Equipment	30	L5.0	N/A	N/A	0%	30	SQ	0%	0%	0%
396.0	Power Operated Equipment	N/A	N/A	N/A	N/A	N/A	25	SQ	0%	0%	0%
397.0	Communication Equipment	22	L3.0	N/A	N/A	0%	22	SQ	6%	3%	3%
398.0	Miscellaneous Equipment	20	S5.0	N/A	N/A	0%	20	SQ	0%	3%	-3%

Note: Kentucky Power Company's existing depreciation rates are from Case No. 91-066. No detail of Cost of Removal % and Salvage Factor % is available from the order from that Case.