BEFORE THE

PUBLIC SERVICE COMMISSION OF KENTUCKY

IN THE MATTER OF

GENERAL ADJUSTMENTS IN
ELECTRIC RATES OF
KENTUCKY POWER COMPANY CASE NO. 91-066

DIRECT TESTIMONY

OF

JAMES E. HENDERSON

ON BEHALF OF
KENTUCKY POWER COMPANY

DIRECT TESTIMONY OF

JAMES E. HENDERSON

BEFORE THE

PUBLIC SERVICE COMMISSION OF KENTUCKY IN CASE NO. 91-066

Q. Please state your name and business address.

A. My name is James E. Henderson. My business address is 1 Riverside Plaza, Columbus, Ohio.

Q. By whom are you employed and in what capacity?

A. I am employed by American Electric Power Service Corporation, (AEPSC), a wholly-owned subsidiary of American Electric Power Company, Inc. (AEP), the parent company of Kentucky Power Company (Kentucky Power or Company). My position is Administrator - Depreciation Studies and Plant Accounting.

Q. Please summarize your educational background and work experience.

A. I received a Bachelor of Science Degree with a major in accounting from Columbus Business University in 1969. I have attended three sessions in depreciation life analysis originally sponsored by Western Michigan University Center of Depreciation Studies and currently sponsored by Depreciation Programs, Inc. I have been a member of the Depreciation Accounting Committee of Edison Electric Institute since 1976.

I joined Columbus Southern Power Company (CSP), one of the eight electric utility companies comprising AEP, as a part-time student employee in 1967. Upon graduation, I was employed full time and held various positions in the Accounting Department in the areas of plant accounting, tax accounting and depreciation.

From 1978 to 1980, I held the position of Director of Depreciation Accounting and from 1980 to 1982, I held the position of Director of Plant Accounting and Depreciation. My responsibilities included performing depreciation studies, preparing book and federal income tax depreciation accruals, preparing and analyzing property valuations for state and local property tax assessments and supervising the accounting for CSP's investment in electric utility plant.

In August 1982, I transferred from CSP to AEPSC. In my current position, I am responsible for depreciation studies and the coordination of plant accounting for the AEP System companies.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to recommend revised depreciation accrual rates for Kentucky Power, based on a depreciation study for Kentucky Power's electric utility plant in service at December 31, 1989. The study report is attached hereto as Exhibit JEH-1. This report and supporting documents were filed with the Commission on March 5, 1991.

Q. Was this study performed by you or under your supervision?

A. Yes.

Q. What was the purpose of the depreciation study?

A. From time to time it is necessary to review existing depreciation rates to determine whether they are still appropriate. The last depreciation study for Kentucky Power was performed in 1980. The purpose of the present study, therefore, is to recommend appropriate annual depreciation rates for Kentucky Power to use in computing annual book depreciation expense in light of current conditions.

Q. Would you briefly describe the methods and procedures used in the study?

A. The methods and procedures are fully described in Exhibit JEH-1. Briefly, however, the study is based on the Average Remaining Life procedure instead of the Average Service Life procedure used in the last depreciation study.

Q. Please explain the difference between the Average Service Life procedure and the Average Remaining Life procedure.

A. The Average Service Life procedure recovers the original cost of the plant, adjusted for net salvage, over the average service life of the investment. The basic assumptions used in determining depreciation rates by the Average Service Life procedure are: 1) the property will be retired over a specified average life and 2) the future amount of net salvage is known. One major shortcoming of the Average Service Life procedure

is that it does not provide a mechanism to adjust the accumulated depreciation when changes occur in service life or net salvage.

The Average Remaining Life procedure compensates for this shortcoming by recovering the original cost of the plant, adjusted for net salvage, less the accumulated depreciation, over the average remaining life of the plant. By this procedure, the annual depreciation rate for each account is determined on the following basis:

Annual Depreciation Expense =

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

Annual Depreciation Rate =

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

Q. Were there any other major changes in methodology from the last study?

A. Yes. We changed the method for determining net salvage for steam production plant. Previously, we had used an industry standard value of negative ten percent. However, because of the significant increases in the cost of removal of production plant, it has now become more appropriate to use a site-specific analysis. To assist in establishing the net salvage applicable to Kentucky Power's steam

generating plant, Kentucky Power had a detailed cost of removal study made by the engineering firm Sargent and Lundy (S&L). S&L estimated the probable net cost to demolish Big Sandy Plant based on the current price level and my recommended depreciation rates are calculated on that basis; however, I recommend that Kentucky Power adjust the estimated cost of removal in future depreciation studies to reflect changes in price level. This will enable the Company to recover the estimated actual removal costs that can reasonably be expected to be incurred at the time the Big Sandy Plant is retired.

Q. How are the depreciation rates which you recommend used in determining annual depreciation expense?

A. In the Study, depreciation rates were determined for each primary plant account. The resulting rates for each account at December 31, 1989 were then applied to the investment in each account at December 31, 1989 and the results were composited to determine a rate for each functional group of depreciable property for which Kentucky Power computes the annual depreciation expense and maintains the accumulated provisions for depreciation.

Q. How do the depreciation rates recommended as a result of the study compare with Kentucky Power's current rates?

A. The results by primary plant account and functional group are shown in Exhibit JEH-1 on Schedule I, pages I-2 through I-4. Based on December 31, 1989 depreciable plant in service Kentucky Power's overall composite rate decreases from 3.09% to 2.96%.

Q. Will you explain, in general, what caused the reduction in the overall composite depreciation rate?

A. Yes. In general, the depreciable lives of all functional plant groups have increased since the last depreciation study. This resulted in a decrease in the composite depreciation rate for all functional plant groups. The increase in the depreciable life for Steam Production Plant, however, was mitigated by the effect of the site-specific demolition cost estimate for Big Sandy Plant.

Q. When do you recommend that the revised depreciation rates become effective?

A. I recommend that the revised depreciation rates become effective concurrent with the effective date of new rates established by the Commission in Case No. 91-066, Kentucky Power's 1991 Rate Application.

Q. Does this conclude your direct testimony?

A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

COUNTY OF FRANKLIN

STATE OF OHIO

CASE NO. 91-066

Affidavit

James E. Henderson, upon first being duly sworn, hereby makes oath that if the foregoing questions were propounded to him at a hearing before the Public Service Commission of Kentucky, he would give the answers recorded following each of said questions and that said answers are true.

James E. Henderson

Subscribed and sworn to before me by James E. Henderson this 4th day of April 1991.

Notary Public

My Commission Expires 11/21/92

DOROTHY O. GROSSMAN
NOTARY PUBLIC - STATE OF OHIO
MY COMMISSION EXPIRES 11/21/92

KENTUCKY POWER COMPANY

DEPRECIATION STUDY

OF

ELECTRIC PLANT IN SERVICE

AT DECEMBER 31, 1989

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Introduction

This report presents the results of a depreciation study of Kentucky Power Company's (KP) depreciable electric utility plant in service at December 31, 1989. The study was prepared by James E. Henderson, Administrator of Depreciation Studies and Plant Accounting at American Electric Power Service Corporation. The purpose of this depreciation study was to develop appropriate annual depreciation accrual rates for each of the primary plant accounts which comprise the functional groups for which KP computes its annual depreciation expense.

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

Section I of this report contains Schedule I, which shows the recommended depreciation accrual rates by primary plant accounts and composited by the functional groups for which KP computes depreciation accruals and maintains the accumulated book depreciation. A comparison of KP's current functional group composite depreciation rates and accruals to the recommended functional group rates and accruals shown on Schedule I follows:

ANNUAL DEPRECIATION ACCRUALS ($000)

	Current		Recommended	
Functional Group	Rate %	Amount	Rate %	Amount
Steam Production	3.67	$ 7,220	3.78	$ 7,430
Transmission	2.07	4,640	1.71	3,830
Distribution	3.64	8,244	3.52	7,979
General	2.66	551	2.54	527
Total	3.09	$20,655	2.96	$19,766

Calculations were also made to compare the calculated depreciation requirement to the actual accumulated depreciation on KP's books at December 31, 1989. These calculations indic d the total accumulated depreciation should be $207,945,152 whereas KP's books showed $199,619,331. This reflects a variance of $8,325,821 or about 4%. This difference is small, less than 6 months accrual, and indicates that the accumulated depreciation is at an appropriate level as of the study date.

Section II contains an explanation of the methods and procedures used in this study. Examples of computations discussed in Section II appear in Appendix A.

Section I

Schedule I

SCHEDULE I

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, 1989.

Column IV - Average Life and (Iowa) Curve Type. Fcst. indicates lives were determined using a Life-Span Forecast Analysis.

Column V - Terminal Retirement Date for accounts utilizing Life-Span Forecast Analysis.

Column VI - Net Salvage Ratio.

Column VII - Total to be Recovered (Column III)(Column VI).

Column VIII - Calculated Depreciation Requirement.

Column IX - Allocated Accumulated Depreciation - KP's functional group accumulated depreciation (book reserve) spread to each account on the basis of the Calculated Depreciation Requirement shown in Column VIII.

Column X - Remaining to be Recovered (Column VII - Column IX).

Column XI - Average Remaining Life.

Column XII - Recommended Annual Accrual Amount (Column X/Column XI).

Column XIII - Recommend Annual Accrual Percent or Depreciation Rate (Column XII/Column III).

KENTUCKY POWER COMPANY
CALCULATION OF DEPRECIATION RATES BY THE REMAINNG LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 1989
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

SCHEDULE I

ACCOUNT NO. (I)	ACCOUNT TITLE (II)	ORIGINAL COST AT 12/31/89 (III)	AVERAGE LIFE & CURVE TYPE (IV)	TERMINAL RETIREMENT DATE (V)	NET SALVAGE RATIO (VI)	TOTAL TO BE RECOVERED (VII)	CALCULATED DEPRECIATION REQUIREMENT (VIII)	ALLOCATED ACCUMULATED DEPRECIATION (IX)	REMAINING TO BE RECOVERED (X)	AVERAGE REMAINING LIFE (XI)	RECOMMENDED ANNUAL ACCRUAL AMOUNT (XII)	RECOMMENDED ANNUAL ACCRUAL PERCENT (XIII)
	STEAM PRODUCTION PLANT											
311.0	Structures & Improvements - Unit 1	6,480,055	FCST.	2013	1.22	7,905,667	4,121,315	3,565,895	4,339,772	23.4	185,778	2.87%
311.0	Structures & Improvements - Unit 2	18,472,125	FCST.	2009	1.22	22,535,993	11,185,533	9,678,085	12,857,907	19.3	667,250	3.61%
311.0	Structures & Improvements	24,952,180				30,441,660	15,306,848	13,243,981	17,197,679		853,028	3.42%
312.0	Boiler Plant Equipment - Unit 1	18,821,907	FCST.	2013	1.22	22,962,727	11,746,357	10,163,328	12,799,398	22.0	581,526	3.09%
312.0	Boiler Plant Equipment - Unit 2	86,737,669	FCST.	2009	1.22	105,819,956	49,548,861	42,871,279	62,948,677	17.8	3,530,492	4.07%
312.0	Boiler Plant Equipment	105,559,576				128,782,683	61,295,218	53,034,608	75,748,075		4,112,019	3.90%
314.0	Turbogenerator Equip. - Unit 1	16,294,658	FCST.	2013	1.22	19,879,483	9,037,906	7,819,889	12,059,594	22.2	543,715	3.34%
314.0	Turbogenerator Equip. - Unit 2	34,042,698	FCST.	2009	1.22	41,532,092	20,246,148	17,517,623	24,014,469	17.8	1,348,370	3.96%
314.0	Turbogenerator Equipment	50,337,356				61,411,574	29,284,054	25,337,512	36,074,062		1,892,085	3.76%
315.0	Accessory Electrical Equip. - Unit 1	2,481,884	FCST.	2013	1.22	3,027,898	1,522,708	1,317,496	1,710,402	23.2	73,724	2.97%
315.0	Accessory Electrical Equip. - Unit 2	9,401,515	FCST.	2009	1.22	11,469,848	5,481,222	4,742,531	6,727,318	19.1	351,847	3.74%
315.0	Accessory Electrical Equipment	11,883,399				14,497,747	7,003,930	6,060,027	8,437,720		425,571	3.58%
316.0	Misc. Power Plant Equip. - Unit 1	1,042,317	FCST.	2013	1.22	1,271,627	671,234	580,773	690,853	22.1	31,232	3.00%
316.0	Misc. Power Plant Equip. - Unit 2	2,959,278	FCST.	2009	1.22	3,610,319	1,645,037	1,423,339	2,186,980	18.8	116,082	3.92%
316.0	Miscellaneous Power Plant Equipment	4,001,595				4,881,946	2,316,271	2,004,113	2,877,833		147,314	3.68%
	Total Steam Production Plant	79% 196,734,106				36% 240,015,609	115,206,321	99,680,240	140,335,369		7,430,017	3.78%

KENTUCKY POWER COMPANY
CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 1989
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

SCHEDULE I

ACCOUNT NO. (I)	ACCOUNT TITLE (II)	ORIGINAL COST AT 12/31/89 (III)	AVERAGE LIFE AND CURVE TYPE (IV)	TERMINAL RETIREMENT DATE (V)	NET SALVAGE RATIO (VI)	TOTAL TO BE RECOVERED (VII)	CALCULATED DEPRECIATION REQUIREMENT (VIII)	ALLOCATED ACCUMULATED DEPRECIATION (IX)	REMAINING TO BE RECOVERED (X)	AVERAGE REMAINING LIFE (XI)	RECOMMENDED ANNUAL ACCRUAL AMOUNT (XII)	RECOMMENDED ANNUAL ACCRUAL PERCENT (XIII)
	TRANSMISSION PLANT											
350.2	Rights of Way	18,343,932	75 R4.0	N.A.	1.00	18,343,932	2,423,961	2,955,668	15,388,264	65.1	236,415	1.29%
352.0	Structures & Improvements	4,097,243	55 S1.5	N.A.	1.00	4,097,243	929,029	1,132,816	2,964,427	42.5	69,702	1.70%
353.0	Station Equipment	43,439,346	50 R0.5	N.A.	0.75	32,579,510	5,922,313	7,221,400	25,358,110	40.9	619,851	1.43%
354.0	Towers & Fixtures Below 138KV	734,914	32 R4.0	N.A.	1.00	734,914	403,920	492,522	242,392	14.4	16,821	2.29%
354.0	Towers & Fixtures Above 138KV	75,569,462	55 R4.0	N.A.	1.00	75,569,462	11,582,836	14,123,584	61,445,878	46.6	1,319,430	1.75%
355.0	Poles & Fixtures Below 138KV	8,302,731	25 S6.0	N.A.	1.00	8,302,731	4,134,742	5,041,717	3,261,014	12.6	259,842	3.13%
355.0	Poles & Fixtures Above 138KV	4,130,948	45 R3.0	N.A.	1.00	4,130,948	969,355	1,181,987	2,948,961	34.4	85,626	2.07%
356.0	OH Cond. & Devices Below 138KV	8,028,919	35 S6.0	N.A.	0.90	7,226,027	3,445,607	4,201,417	3,024,610	18.3	165,189	2.06%
356.0	OH Cond. & Devices Above 138KV	61,406,717	50 R3.0	N.A.	0.90	55,266,045	9,628,842	11,740,973	43,525,072	41.3	1,054,131	1.72%
57.0	Underground Conduit	11,590	37 R2.0	N.A.	1.00	11,590	2,066	2,519	9,071	30.4	298	2.57%
58.0	Underground Conductor	106,066	44 R1.0	N.A.	1.00	106,066	13,099	15,972	90,094	38.6	2,336	2.20%
	Total Transmission Plant	224,171,868				206,368,468	39,455,770	46,110,575	158,257,893		3,829,642	1.71%
	DISTRIBUTION PLANT											
360.2	Rights of Way	2,257,140	75 R4.0	N.A.	1.00	2,257,140	945,495	900,186	1,356,954	43.6	31,137	1.38%
361.0	Structures & Improvements	1,778,665	65 L0.5	N.A.	1.00	1,778,665	253,210	241,076	1,537,589	55.8	27,580	1.55%
362.0	Station Equipment	20,821,283	25 L0.0	N.A.	0.75	15,615,962	4,111,054	3,914,047	11,701,915	18.4	635,283	3.05%
364.0	Poles, Towers, & Fixtures	63,822,842	28 L0.0	N.A.	1.00	63,822,842	10,653,509	10,142,979	53,679,863	23.3	2,300,894	3.61%
365.0	Overhead Conductor & Devices	50,285,231	26 R1.5	N.A.	0.75	37,713,923	10,234,024	9,743,597	27,970,327	18.9	1,476,786	2.94%
366.0	U. G. Conduit	757,353	37 R2.0	N.A.	1.00	757,353	178,061	169,528	587,825	28.3	20,771	2.74%
367.0	U. G. Conductor	1,766,966	44 R1.0	N.A.	1.00	1,766,966	272,832	259,758	1,507,208	37.2	40,505	2.29%
368.0	Line Transformers	49,415,153	25 R1.5	N.A.	0.85	42,002,880	11,786,758	11,221,922	30,780,958	18.0	1,711,955	3.46%
369.0	Services	13,190,725	18 R2.0	N.A.	1.00	13,190,725	4,849,229	4,616,648	8,573,877	11.4	753,416	5.71%
370.0	Meters	16,631,541	27 R0.5	N.A.	1.00	16,631,541	3,399,360	3,236,458	13,395,083	21.5	623,607	3.75%
371.0	Installations on Custs. Prem.	3,913,254	11 L0.0	N.A.	0.70	2,739,278	619,759	590,059	2,149,218	8.5	252,552	6.45%
373.0	Street Lighting & Signal Sys.	1,823,752	15 L0.0	N.A.	0.85	1,550,189	305,015	290,398	1,259,791	12.1	104,547	5.73%
	Total Distribution Plant	226,463,905				199,827,465	47,608,306	45,326,856	154,500,609		7,979,035	3.52%

SCHEDULE I

KENTUCKY POWER COMPANY
CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 1989
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

ACCOUNT NO. (I)	ACCOUNT TITLE (II)	ORIGINAL COST AT 12/31/89 (III)	AVERAGE LIFE AND CURVE TYPE (IV)	TERMINAL RETIREMENT DATE (V)	NET SALVAGE RATIO (VI)	TOTAL TO BE RECOVERED (VII)	CALCULATED DEPRECIATION REQUIREMENT (VIII)	ALLOCATED ACCUMULATED DEPRECIATION (IX)	REMAINING TO BE RECOVERED (X)	AVERAGE REMAINING LIFE (XI)	RECOMMENDED ANNUAL ACCRUAL AMOUNT (XII)	RECOMMENDED ANNUAL ACCRUAL PERCENT (XIII)
	GENERAL PLANT											
389.2	Rights of Way	31,964	75 R4.0	N.A.	1.00	31,964	3,018	3,458	28,506	67.9	420	1.31%
390.0	Structures & Improvements	14,953,539	45 L3.0	N.A.	1.00	14,953,539	3,844,462	4,404,663	10,548,876	33.4	315,551	2.11%
391.0	Office Furniture & Equipment	1,003,832	35 R0.5	N.A.	0.90	903,449	219,586	251,583	651,866	26.5	24,608	2.45%
392.0	Office Trans. Equip. Other	67,171	30 R3.0	N.A.	1.00	67,171	29,745	34,079	33,092	16.7	1,979	2.95%
393.0	Stores Equipment	167,954	30 R1.0	N.A.	1.00	167,954	44,519	51,006	116,948	22.1	5,304	3.16%
394.0	Tools Shop & Garage Equipment	541,771	30 R0.5	N.A.	1.00	541,771	110,850	127,003	414,768	23.9	17,383	3.21%
395.0	Laboratory Equipment	446,407	30 L5.0	N.A.	1.00	446,407	144,397	165,438	280,969	20.3	13,841	3.10%
397.0	Communication Equipment	3,009,874	22 L3.0	N.A.	1.00	3,009,874	1,078,317	1,235,445	1,774,429	14.1	125,868	4.18%
398.0	Miscellaneous Equipment	498,397	20 S5.0	N.A.	1.00	498,397	199,861	228,984	269,413	12.0	22,489	4.51%
	Total General Plant	20,720,909				20,620,526	5,674,755	6,501,660	14,118,866		527,242	2.54%
	Total Depreciable Plant	668,090,788				666,832,068	207,945,152	199,619,331	467,212,737		19,765,937	2.96%

1,322 2.85 19,012

SECTION II

DISCUSSION OF METHODS

AND PROCEDURES USED IN THE STUDY

STUDY METHODS AND PROCEDURES

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 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 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.

Capital Recovery Methods

There are two generally accepted methods that are usually used to develop straight line depreciation accrual rates. The average service life method recovers the original cost of the plant, adjusted for net salvage, over the average service of the investment. The basic assumptions used in determining depreciation rates by the Average Service Life method are: 1) the property will be retired over a specified average life and 2) the future amount

of net salvage is known. One major shortcoming of the Average Service Life method is that it does not provide a mechanism to adjust the accumulated depreciation when changes occur in the average service life or net salvage.

The Remaining Life method compensates for this shortcoming by recovering the original cost of the plant, adjusted for net salvage, less the 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:

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

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

Because the Remaining Life method provides a method to adjust the accumulated depreciation when changes occur in the estimates of service life and net salvage for depreciable property groups, it is recommended that the depreciation rates be determined by the Straight Line Remaining Life Method.

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

analysis methods 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:

Forecast Analysis

The life-span forecast analysis was employed for production plant. KP's investment in production plant is the Big Sandy Generating Station which is located on the Big Sandy River near Louisa, Kentucky and consists of Unit One with a nameplate capacity of 260,000 KW and Unit Two with a nameplate capacity of 800,000 KW. Units One and Two were placed in service in 1963 and 1969, respectively. The life-span method of analysis is particularly suited to specific locations property, such as Big Sandy Plant, where all of the surviving investments are likely to be retired in total at a future date.

The key elements in the life-span forecast analysis are the aged surviving investments, the projected deactivation date of the facility and the expected interim retirements. Interim retirements are those that are expected to occur between the date of the depreciation study and the expected final deactivation date. Examples of interim retirements include fans, pumps, motors, a set of boiler tubes, a turbine rotor, etc.

The aged surviving investments were obtained from KP's property records. The deactivation dates used in the life-span forecast

analysis were 2013 for Unit One and 2009 for Unit Two. The deactivation dates were provided by American Electric Power Service Corporation, System Planning Department. The interim retirement history for each unit was analyzed by primary plant account. The results of those analyses were used to project future interim retirements. An example of the interim retirement analysis for Account 312.0, Boiler Plant Equipment, for Unit One is shown in the Appendix on Page A-1.

Actuarial Analysis

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 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.

An example of the calculations involved in the Actuarial Method of Life Analysis is shown in the Appendix on Pages A-2 through A-4 for Account 353.0 - Transmission Station Equipment. Pages A-2 and A-3 show the computation of the actual survivor curve for the experience band 1950-1989 inclusive based on historical data

supplied by KP. The actual survivor curve for the 1950-1989 period is plotted and matched on Page A-4, as explained above. This method was used for the following accounts:

350.2 Transmission-Rights of Way
352.0 Structures and Improvements
353.0 Station Equipment
354.0 Towers and Fixtures 138KV and Above
355.0 Poles and Fixtures 138KV and Above
356.0 OH Conductor and Devices 138KV and Above
360.2 Distribution - Rights of Way
361.0 Structures and Improvements
362.0 Station Equipment
390.0 General - Structures and Improvements

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 different survivor curves and average life combinations until a pattern is discovered which produces a series of "simulated balances" most nearly equalling 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 such and analysis by the Balance Method is shown for Account 368 - Line Transformers on page A-5 in the Appendix. In

the case of the Balances Method each curve type tested is shown along with the average service life which produced the minimum sum of squared differences from the actual balances. The analysis also shows the value of the Index of Variation of the deference which is calculated according to the following equation for the Balances Method:

$$\text{Index of Variation} = (1000)\sqrt{\frac{\text{Sum of Squared Differences}}{\text{No. of Test Years}}} \Big/ \text{Average Actual Balance}$$

The lower the value of the Index the better the agreement with the actual data. The best fit is marked with a dash on the output. The SPR Method of Life Analysis was utilized for the following accounts:

354.0 Transmission - Towers and Fixtures Below 138 KV
355.0 Poles and Fixtures Below 138 KV
356.0 OH Conductor and Devices - Below 138 KV
364.0 Distribution - Poles, Towers and Fixtures
365.0 OH Conductor and Devices
366.0 Underground Conduit
367.0 Underground Conductor and Devices
368.0 Line Transformers
369.0 Services
370.0 Meters
371.0 Installations on Customers Premises

373.0 Street Lighting and Signal Systems
391.0 Office Furniture and Equipment
392.0 Transportation Equipment - Other
393.0 Stores Equipment
394.0 Tools, Shop and Garage Equipment
395.0 Laboratory Equipment
397.0 Communication Equipment
398.0 Miscellaneous Equipment

Physical Inspection of Property

On November 27, 1990, we visited the Big Sandy Generating Station and viewed other facilities including Baker substation to observe housekeeping, maintenance and construction practices in order to be familiar with the equipment and the environment in which it functions.

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 Simulating Methods was primarily based on the results of the mortality analyses of past retirement history.

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. KP maintains salvage and removal costs at the

functional plant level, rather than by primary plant accounts. To aid in the selection, a review was made of the Company's experience for each plant function with respect to salvage and removal costs for the period 1954 to 1989. A sample of the type of salvage analysis made appears in Appendix A on Pages A-6 through A -8 for the Distribution Plant function. 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. In order to determine a net salvage percent for the individual plant accounts, the original cost retirements were detailed by account for the period 1975-1989 and, based on judgement, a net salvage percentage was selected for each account.

The net salvage percents selected were converted to net salvage ratios and appear in Column VI 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 the accumulated depreciation at the functional group to the accounts comprising each group.

The net salvage ratios shown in Column VI on Schedule I in Section I of this report may be explained as follows:

1. Where the ratio is shown as unity (1.00), it was assumed that

the net salvage in that particular account would be zero.

2. 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 percent, the net salvage ratio would be expressed as .80.

3. 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 percent, the net salvage ratio would be expressed as 1.05.

Net Salvage for Steam Production Plants

While the analyses described above would be applicable to the interim retirements for production plants, the most significant net salvage realization for generating plants (units) occurs at the end of their life. Therefore, to assist in establishing the net salvage applicable to KP's steam generating plant, KP had a detailed cost of removal study made by the engineering firm Sargent and Lundy (S&L). S&L estimated the probable net cost to demolish each plant based on the current price level. The S&L cost estimate indicates that the demolition costs are labor intensive. We recommend that KP adjust the estimated cost of removal in future depreciation studies to reflect changes in price level. This will enable KP to recover the estimated actual removal costs that can

reasonably be expected to be incurred at the time Big Sandy plant is retired.

Calculation of Depreciation Requirement at December 31, 1989

KP maintains the accumulated depreciation by functional plant group as required by the FERC Uniform System of Accounts. Therefore, it was necessary to allocate the functional accumulated depreciation to the individual plant accounts to complete the accrual rate calculation. The allocation was based on the calculation of a depreciation requirement (theoretical reserve) for each plant account using the average service life and curve type recommended in this study. An example of the calculation of the depreciation requirement at December 31, 1989 for Account 353 - Transmission Station Equipment, is shown on Pages A-9 and A-10 in Appendix A.

That sample printout is explained in detail as follows:

Column I - Age of each year's installation at December 31, 1989 based on the conventional procedure that all property installed in any year is assumed to be installed at the midpoint of that year.

Column II - Year of installation of the surviving dollars shown in Column III.

Column III - The original cost at December 31, 1989 by year installed, as supplied directly from Company records.

Column IV - The Average Remaining Life of each vintage of Original Cost at the various ages indicated in Column I.

Column V - Depreciation Reserve Ratio based on the Life and Dispersion (Iowa Curve) shown in Column IV heading.

Column VI - Theoretical Reserve is the product of Column III times Column V for each year.

The effect of any estimated net salvage, as indicated on page A-10, is provided by adjusting the subtotal rather than have each vintage of original cost appearing in Column III reflect such salvage.

The Average Remaining Life, also shown, is the result of the weighting of the dollars of each age.

Appendix A

Examples of Calculations Discussed In Section II

Interim Retirement Analysis

Actuarial Analysis

Simulated Plant Record Analysis

Net Salvage Analysis

Calculation of Depreciation Requirement

A-1

KENTUCKY POWER COMPANY
CALCULATION OF INTERIM RETIREMENT RATIOS
BIG SANDY GENERATING STATION UNIT #1
ACCOUNT 312.0 BOILER PLANT EQUIPMENT

YEAR	ADDITIONS	RETIREMENTS	BALANCE	AVERAGE BALANCE	RETIREMENT RATIO
1963	16,508,970	0	16,508,970	N. A.	N. A.
1964	119,842	8,093	16,620,719	16,564,845	0.0005
1965	33,135	7,505	16,646,349	16,633,534	0.0005
1966	176,256	19,803	16,802,802	16,724,576	0.0012
1967	7,026	3,196	16,806,632	16,804,717	0.0002
1968	39,011	127,966	16,717,677	16,762,155	0.0076
1969	2,036	5,000	16,714,773	16,716,225	0.0003
1970	960,242	569,493	17,105,522	16,910,148	0.0337
1971	20,599	7,136	17,118,985	17,112,254	0.0004
1972	12,074	12,000	17,119,059	17,119,022	0.0007
1973	2,546	5,700	17,115,905	17,117,482	0.0003
1974	4,167	126,850	16,993,222	17,054,564	0.0074
1975	382	5,683	16,987,921	16,990,572	0.0003
1976	60,093	0	17,048,014	17,017,968	0.0000
1977	689,813	215,065	17,522,762	17,285,388	0.0124
1978	81,885	119,379	17,485,268	17,504,015	0.0068
1979	60,521	379	17,545,410	17,515,339	0.0000
1980	14,685	62,704	17,497,391	17,521,401	0.0036
1981	89,615	318,487	17,268,519	17,382,955	0.0183
1982	208,013	16,842	17,459,690	17,364,105	0.0010
1983	0	6,754	17,452,936	17,456,313	0.0004
1984	207,517	77,996	17,582,457	17,517,697	0.0045
1985	548,169	17,686	18,112,940	17,847,699	0.0010
1986	554,796	212,823	18,454,913	18,283,927	0.0116
1987	179,327	78,768	18,555,472	18,505,193	0.0043
1988	137,220	19,359	18,673,333	18,614,403	0.0010
1989	194,155	45,581	18,821,907	18,747,620	0.0024
TOTAL 1968-1989	4,066,926	2,051,651	385,354,076	384,346,439	0.1182

AVERAGE INTERIM RATE = $\frac{0.1182}{22}$ = 0.0054

FUTURE ANNUAL INTERIM RETIREMENTS = 18,821,907 * 0.0054 = 101,638

DELOITTE HASKINS & SELLS DEPRECIATION SYSTEM - DSACT03 RELEASE

STUDY AS OF DECEMBER 31, 1989 PAGE

**** KENTUCKY POWER COMPANY **** 10-23-1
ACCOUNT NO.: 35300000

1950 THRU 1989 BAND ANALYSIS SURVIVOR REPORT

AGE	RETIREMENTS	EXPOSURES	ANNUAL % SURVIVORS	CUMULATIVE % SURVIVORS
0.50	85384.	47795798.	99.82	99.82
1.50	124128.	46770563.	99.73	99.56
2.50	164148.	46177414.	99.64	99.20
3.50	663567.	45128700.	98.53	97.74
4.50	166590.	43378492.	99.62	97.37
5.50	389781.	41783167.	99.07	96.46
6.50	87653.	41420690.	99.79	96.26
7.50	454579.	40323548.	98.87	95.17
8.50	934988.	40171236.	97.67	92.96
9.50	339612.	38688633.	99.12	92.14
10.50	165754.	22809318.	99.27	91.47
11.50	286107.	21758943.	98.69	90.27
12.50	239179.	21599311.	98.89	89.27
13.50	152052.	20330849.	99.25	88.60
14.50	121464.	19912025.	99.39	88.06
15.50	157036.	19801288.	99.21	87.36
16.50	225197.	19647103.	98.85	86.36
17.50	33783.	19407908.	99.83	86.21
18.50	86261.	19001265.	99.55	85.82
19.50	254107.	18512958.	98.63	84.64
20.50	634015.	18063094.	96.49	81.67
21.50	29937.	7694907.	99.61	81.35
22.50	28296.	7155196.	99.60	81.03
23.50	116468.	6889829.	98.31	79.66
24.50	140673.	6550338.	97.85	77.95
25.50	46497.	5937298.	99.22	77.34
26.50	11929.	5553437.	99.79	77.17
27.50	69537.	4583786.	98.48	76.00
28.50	37592.	4139021.	99.09	75.31
29.50	166512.	3912958.	95.74	72.11
30.50	48748.	3711018.	98.69	71.16
31.50	34134.	3553118.	99.04	70.48
32.50	46759.	3416574.	98.63	69.51
33.50	144209.	3363453.	95.71	66.53
34.50	7829.	3162746.	99.75	66.37
35.50	3112.	3046997.	99.90	66.30

DELOITTE HASKINS & SELLS DEPRECIATION SYSTEM - DSACT03 RELEASE 5

STUDY AS OF DECEMBER 31, 1989 PAGE

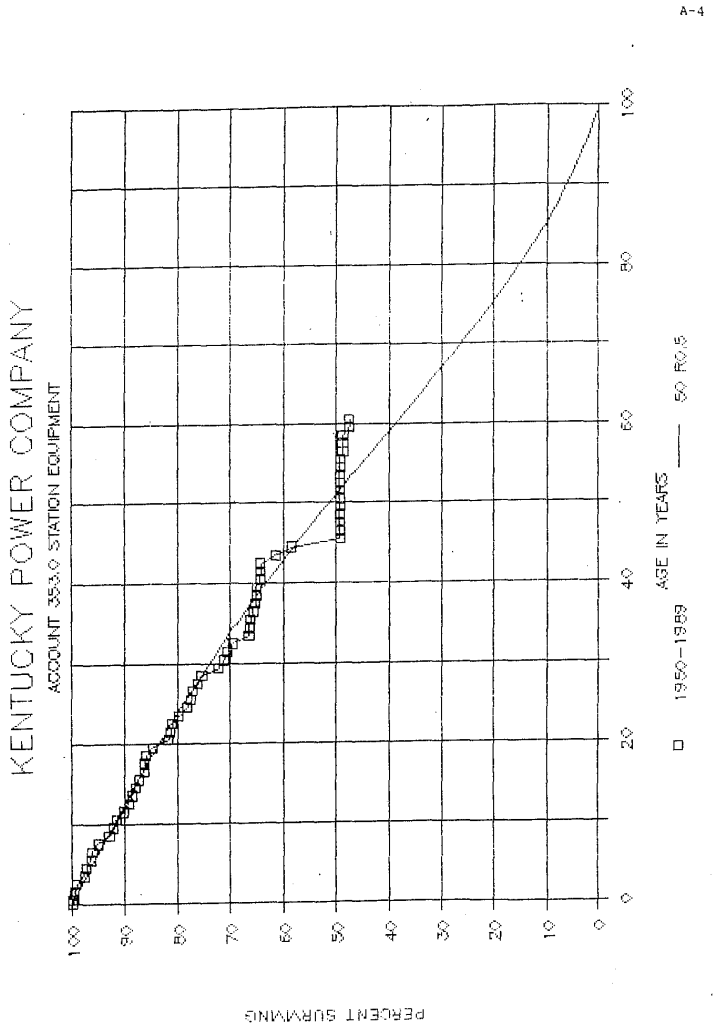
**** KENTUCKY POWER COMPANY **** 10-23-19
ACCOUNT NO.: 35300000

1950 THRU 1989 BAND ANALYSIS SURVIVOR REPORT

AGE	RETIREMENTS	EXPOSURES	% ANNUAL SURVIVORS	% CUMULATIVE SURVIVORS
36.50	25729.	3033563.	99.15	65.74
37.50	23997.	2913798.	99.18	65.20
38.50	1987.	2378568.	99.92	65.14
39.50	1130.	2131863.	99.95	65.11
40.50	19212.	2120705.	99.09	64.52
41.50	5625.	1999343.	99.72	64.34
42.50	706.	1954434.	99.96	64.31
43.50	84069.	1950108.	95.69	61.54
44.50	86535.	1823282.	95.25	58.62
45.50	240935.	1534841.	84.30	49.42
46.50	287.	1215711.	99.98	49.41
47.50	0.	1206809.	100.00	49.41
48.50	0.	942806.	100.00	49.41
49.50	0.	911701.	100.00	49.41
50.50	0.	888445.	100.00	49.41
51.50	54.	856052.	99.99	49.40
52.50	0.	822605.	100.00	49.40
53.50	0.	666113.	100.00	49.40
54.50	0.	602832.	100.00	49.40
55.50	0.	592105.	100.00	49.40
56.50	6860.	589121.	98.84	48.83
57.50	134.	582261.	99.98	48.82
58.50	0.	575141.	100.00	48.82
59.50	13553.	575141.	97.64	47.67
60.50	0.	136693.	100.00	47.67

TOTAL 7208430.

REALIZED LIFE = 43.94 YEARS


A-4
KENTUCKY POWER COMPANY
ACCOUNT 353.0 STATION EQUIPMENT
PERCENT SURVIVING
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
AGE IN YEARS
1950-1989
50 R0.5

DELOITTE HASKINS & SELLS — DEPRECIATION SYSTEM - DSSIMBAL02 RELEASE 5.0

STUDY AS OF DECEMBER 31, 1989 — PAGE 1

KENTUCKY POWER COMPANY #### — 9-16-1990

SIMULATED PLANT BALANCE METHOD OF LIFE ANALYSIS FOR ACCOUNT 368000

USING BALANCES PERIOD EQUAL TO LAST 40 YEARS

AVERAGE LIFE AT WHICH BOOK BALS EQUAL SIMULATED BALS AT END OF 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	MORT	INDEX OF VARIATION FOR ANALYSIS OF DATA ENDING IN 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
35.4	34.9	34.5	34.0	33.7	33.5	33.3	33.1	33.1	33.1	S0	205	251	275	293	288	275	259	247	226	211
30.6	30.3	30.1	29.8	29.7	29.5	29.5	29.4	29.4	29.4	S0.5	189	234	257	277	272	260	245	229	212	199
27.7	27.5	27.3	27.1	27.0	26.9	26.8	26.8	26.8	26.8	S0	211	245	265	283	278	265	250	233	217	203
26.2	26.0	25.9	25.7	25.6	25.5	25.5	25.4	25.4	25.4	S0.5	226	257	271	287	281	269	254	238	221	207
24.9	24.8	24.6	24.5	24.4	24.3	24.2	24.2	24.2	24.2	S1	279	286	293	305	298	286	271	255	237	221
24.0	23.9	23.8	23.7	23.6	23.6	23.5	23.5	23.5	23.4	S1.5	321	313	313	320	312	299	285	269	251	236
23.2	23.2	23.1	23.0	23.0	22.9	22.9	22.8	22.8	22.8	S2	373	355	345	345	335	323	309	294	275	261
22.5	22.5	22.5	22.4	22.3	22.2	22.2	22.1	22.1	22.0	S3	439	408	389	383	371	358	345	333	315	300
22.0	22.0	22.0	21.9	21.8	21.8	21.7	21.6	21.6	21.5	S4	500	459	432	421	406	392	380	369	352	341
21.8	21.8	21.7	21.7	21.6	21.5	21.5	21.4	21.3	21.2	S5	537	492	459	444	426	412	400	391	375	368
21.6	21.6	21.6	21.6	21.5	21.4	21.3	21.3	21.2	21.1	S6	556	510	474	455	435	420	409	402	388	382
34.1	33.7	33.4	33.0	32.7	32.5	32.4	32.3	32.3	32.2	L0	209	258	284	304	300	287	271	256	236	220
30.8	30.5	30.3	30.0	29.9	29.7	29.6	29.6	29.6	29.5	L0.5	209	253	278	300	297	285	270	253	236	229
28.5	28.3	28.1	27.8	27.7	27.6	27.5	27.4	27.4	27.4	L1	230	266	289	311	308	297	281	264	246	239
26.8	26.7	26.5	26.3	26.2	26.1	26.0	25.9	25.9	25.9	L1.5	254	278	296	315	313	302	288	272	253	247
25.4	25.3	25.1	25.0	24.8	24.7	24.6	24.6	24.6	24.5	L2	297	308	319	336	333	323	309	293	274	269
23.5	23.4	23.3	23.2	23.1	23.0	23.0	22.9	22.9	22.8	L3	387	372	366	372	365	354	341	327	308	303
22.4	22.4	22.4	22.3	22.2	22.1	22.1	22.0	21.9	21.9	L4	461	428	406	400	388	376	364	352	335	327
22.0	22.0	21.9	21.8	21.8	21.7	21.6	21.5	21.5	21.4	L5	512	470	441	429	413	400	389	379	363	356
30.9	30.6	30.4	30.1	30.0	29.9	29.8	29.7	29.7	29.7	R0.5	179	222	244	262	257	245	231	216	200	187
28.1	27.9	27.8	27.6	27.5	27.4	27.3	27.3	27.3	27.3	R1	-175	-208	-226	243	238	227	213	199	185	173
26.3	26.2	26.1	25.9	25.8	25.8	25.7	25.7	25.7	25.7	R1.5	204	220	230	-242	-236	-225	-211	-198	-184	-172
24.8	24.7	24.6	24.5	24.4	24.4	24.3	24.3	24.3	24.3	R2	261	259	258	264	255	242	228	214	199	187
23.6	23.7	23.7	23.6	23.6	23.5	23.4	23.4	23.4	23.4	R2.5	322	305	294	293	281	267	252	239	222	210
23.0	22.9	22.9	22.8	22.8	22.7	22.7	22.7	22.6	22.6	R3	388	359	339	335	318	304	289	276	259	247
22.3	22.2	22.2	22.1	22.1	22.0	22.0	21.9	21.9	21.8	R4	463	426	400	390	374	359	346	334	317	307
21.8	21.8	21.8	21.7	21.7	21.6	21.5	21.4	21.4	21.3	R5	526	482	450	435	418	403	390	380	365	357

THE INDEX OF VARIATION IS MULTIPLIED BY 10 TO OBTAIN A HIGHER LEVEL OF RANKING PRECISION

DELOITTE HASKINS & SELLS

STUDY AS OF DECEMBER 31, 1989

KENTUCKY POWER COMPANY
ACCOUNT NO.: 10860000
DISTRIBUTION PLANT

YEAR	ADDITIONS	RETIREMENTS	REIMBURSEMENTS AMOUNT	REIMBURSEMENTS RATIO	SALVAGE AMOUNT	SALVAGE RATIO	COST OF REMOVAL AMOUNT	COST OF REMOVAL RATIO	NET SALVAGE W/REIMB.	NET SALVAGE W/O REIMB.
1954	0.	345614.	0.	0.%	164293.	48.%	66201.	19.%	28.%	28.%
1955	0.	329795.	0.	0.%	165818.	50.%	68960.	21.%	29.%	29.%
1956	0.	340400.	0.	0.%	178659.	52.%	81844.	24.%	28.%	28.%
1957	0.	560530.	0.	0.%	243234.	43.%	141931.	25.%	18.%	18.%
1958	0.	505375.	0.	0.%	206808.	41.%	144792.	29.%	12.%	12.%
1959	0.	624939.	0.	0.%	259031.	41.%	152087.	24.%	17.%	17.%
1960	0.	492849.	0.	0.%	271181.	55.%	161636.	33.%	22.%	22.%
1961	0.	819969.	0.	0.%	381111.	46.%	170331.	21.%	26.%	26.%
1962	0.	558196.	0.	0.%	299388.	54.%	192682.	35.%	19.%	19.%
1963	0.	706977.	0.	0.%	279116.	39.%	194420.	28.%	12.%	12.%
1964	0.	773027.	0.	0.%	304668.	39.%	189822.	25.%	15.%	15.%
1965	0.	1012221.	0.	0.%	374123.	37.%	239135.	24.%	13.%	13.%
1966	0.	1071099.	0.	0.%	450349.	42.%	285103.	27.%	15.%	15.%
1967	0.	1463163.	0.	0.%	413889.	28.%	342901.	23.%	5.%	5.%
1968	0.	1330710.	0.	0.%	670448.	50.%	479783.	36.%	14.%	14.%
1969	0.	1560135.	0.	0.%	646533.	41.%	347617.	22.%	19.%	19.%
1970	0.	1143715.	0.	0.%	400222.	35.%	357897.	31.%	4.%	4.%
1971	0.	1315603.	0.	0.%	543957.	41.%	401721.	31.%	11.%	11.%
1972	0.	1475429.	0.	0.%	752589.	51.%	490837.	33.%	18.%	18.%
1973	0.	1773250.	0.	0.%	703812.	40.%	491738.	28.%	12.%	12.%
1974	0.	1273997.	0.	0.%	921165.	72.%	527796.	41.%	31.%	31.%
1975	0.	1413889.	0.	0.%	633350.	45.%	485488.	34.%	10.%	10.%
1976	0.	1770503.	0.	0.%	905056.	51.%	680443.	38.%	13.%	13.%
1977	0.	1790525.	0.	0.%	1032217.	58.%	928730.	52.%	6.%	6.%
1978	0.	2839810.	0.	0.%	1622814.	57.%	952797.	34.%	24.%	24.%
1979	0.	2379695.	0.	0.%	1368931.	58.%	1048294.	44.%	13.%	13.%
1980	0.	3067886.	0.	0.%	1455926.	47.%	1423814.	46.%	1.%	1.%
1981	0.	4492306.	0.	0.%	1883382.	42.%	1737241.	39.%	3.%	3.%
1982	0.	2552584.	0.	0.%	1586478.	62.%	1503023.	59.%	3.%	3.%
1983	0.	3917704.	0.	0.%	1560432.	40.%	1361570.	35.%	5.%	5.%
1984	0.	2274942.	0.	0.%	1275047.	56.%	1464480.	64.%	-8.%	-8.%
1985	0.	3390814.	0.	0.%	1033246.	30.%	1315547.	39.%	-8.%	-8.%
1986	0.	4122421.	0.	0.%	1703914.	41.%	1814294.	44.%	-3.%	-3.%
1987	0.	5062869.	0.	0.%	2341368.	46.%	1686747.	33.%	13.%	13.%
1988	0.	5092695.	0.	0.%	2009198.	39.%	1881879.	37.%	3.%	3.%
1989	0.	7285672.	0.	0.%	5727263.	79.%	1888999.	26.%	53.%	53.%
	0.	70931308.	0.	0.%	34763996.	49.%	25702580.	36.%	13.%	13.%
ROLLING BAND										
1954-1958	0.	2081714.	0.	0.%	953792.	46.%	503728.	24.%	22.%	22.%

DELOITTE HASKINS & SELLS

STUDY AS OF DECEMBER 31, 1989

KENTUCKY POWER COMPANY
ACCOUNT NO.: 10860000
DISTRIBUTION PLANT

YEAR	ADDITIONS	RETIREMENTS	REIMBURSEMENTS AMOUNT	REIMBURSEMENTS RATIO	SALVAGE AMOUNT	SALVAGE RATIO	COST OF REMOVAL AMOUNT	COST OF REMOVAL RATIO	NET SALVAGE W/REIMB.	NET SALVAGE W/O REIMB.
1955-1959	0.	2361039.	0.	0.%	1048530.	44.%	589614.	25.%	19.%	19.%
1956-1960	0.	2524093.	0.	0.%	1155893.	46.%	682290.	27.%	19.%	19.%
1957-1961	0.	3003662.	0.	0.%	1361365.	45.%	770777.	26.%	20.%	20.%
1958-1962	0.	3001328.	0.	0.%	1417519.	47.%	821528.	27.%	20.%	20.%
1959-1963	0.	3202930.	0.	0.%	1489827.	47.%	871156.	27.%	19.%	19.%
1960-1964	0.	3351018.	0.	0.%	1535464.	46.%	908891.	27.%	19.%	19.%
1961-1965	0.	3870390.	0.	0.%	1638406.	42.%	986390.	25.%	17.%	17.%
1962-1966	0.	4121520.	0.	0.%	1707644.	41.%	1101162.	27.%	15.%	15.%
1963-1967	0.	5026487.	0.	0.%	1822145.	36.%	1251381.	25.%	11.%	11.%
1964-1968	0.	5650220.	0.	0.%	2213477.	39.%	1536744.	27.%	12.%	12.%
1965-1969	0.	6437328.	0.	0.%	2555342.	40.%	1694539.	26.%	13.%	13.%
1966-1970	0.	6568822.	0.	0.%	2581441.	39.%	1813301.	28.%	12.%	12.%
1967-1971	0.	6813326.	0.	0.%	2675049.	39.%	1929919.	28.%	11.%	11.%
1968-1972	0.	6825592.	0.	0.%	3013749.	44.%	2077855.	30.%	14.%	14.%
1969-1973	0.	7268132.	0.	0.%	3047113.	42.%	2089810.	29.%	13.%	13.%
1970-1974	0.	6981994.	0.	0.%	3321745.	48.%	2269989.	33.%	15.%	15.%
1971-1975	0.	7252168.	0.	0.%	3554873.	49.%	2397580.	33.%	16.%	16.%
1972-1976	0.	7707068.	0.	0.%	3915972.	51.%	2676302.	35.%	16.%	16.%
1973-1977	0.	8022164.	0.	0.%	4195600.	52.%	3114195.	39.%	13.%	13.%
1974-1978	0.	9088724.	0.	0.%	5114602.	56.%	3575254.	39.%	17.%	17.%
1975-1979	0.	10194422.	0.	0.%	5562368.	55.%	4095752.	40.%	14.%	14.%
1976-1980	0.	11848419.	0.	0.%	6384944.	54.%	5034078.	42.%	11.%	11.%
1977-1981	0.	14570222.	0.	0.%	7363270.	51.%	6090876.	42.%	9.%	9.%
1978-1982	0.	15332281.	0.	0.%	7917531.	52.%	6665169.	43.%	8.%	8.%
1979-1983	0.	16410175.	0.	0.%	7855149.	48.%	7073942.	43.%	5.%	5.%
1980-1984	0.	16305422.	0.	0.%	7761265.	48.%	7490128.	46.%	2.%	2.%
1981-1985	0.	16628350.	0.	0.%	7338585.	44.%	7381861.	44.%	0.%	0.%
1982-1986	0.	16258465.	0.	0.%	7159117.	44.%	7458914.	46.%	-2.%	-2.%
1983-1987	0.	18768750.	0.	0.%	7914007.	42.%	7642638.	41.%	1.%	1.%
1984-1988	0.	19943741.	0.	0.%	8362773.	42.%	8162947.	41.%	1.%	1.%
1985-1989	0.	24954471.	0.	0.%	12814989.	51.%	8587466.	34.%	17.%	17.%

KENTUCKY POWER COMPANY
Distribution Plant Net Salvage Test

Year	Retirements 361 $	362 $	364 $	365 $	366 $	367	368	369	370	371	373	Total $	Net Salvage %	Weighted
1975	4,142	325,372	256,071	230,227	0	1,477	253,830	168,457	105,836	64,832	16,546	1,428,790	10	14,288
1976	744	482,265	328,987	302,893	138	2,083	265,974	176,814	144,244	66,077	4,177	1,774,396	13	23,067
1977	0	252,200	378,298	369,728	0	3,175	312,212	177,138	249,384	58,498	15,865	1,816,498	6	10,899
1978	1,144	600,488	541,825	472,645	216	175	627,160	201,569	174,912	67,643	28,008	2,715,785	24	65,179
1979	(99)	203,011	638,797	516,238	0	8,720	411,317	322,670	196,583	87,903	17,100	2,402,240	13	31,229
1980	5,482	489,660	714,013	532,297	13,388	18,792	707,768	216,061	217,875	114,552	37,188	3,067,076	1	3,067
1981	11,139	961,140	1,253,167	876,800	71	6,687	1,160,266	281,371	261,646	124,056	53,310	4,989,653	3	14,969
1982	0	196,085	635,786	452,557	0	5,334	667,258	166,004	248,786	102,664	44,775	2,519,249	3	7,558
1983	489	128,249	768,785	598,823	78	8,742	816,897	319,764	279,281	156,108	28,192	3,105,408	5	15,527
1984	15,027	293,708	808,923	517,838	3,998	1,761	509,740	304,542	385,107	152,915	13,841	3,007,400	-8	(24,059)
1985	159	376,843	937,730	519,259	5,819	5,814	640,462	281,524	388,485	184,064	37,932	3,378,091	-8	(27,025)
1986	2,048	199,948	1,438,007	919,744	896	8,069	714,994	304,874	350,900	195,928	40,399	4,175,807	-3	(12,527)
1987	4,659	331,975	1,607,747	1,004,247	6,968	20,306	784,243	429,089	373,822	421,123	73,264	5,057,443	13	65,747
1988	3,211	151,011	1,966,798	1,118,810	172	12,299	601,750	392,321	409,799	257,746	110,040	5,023,957	3	15,072
1989	6,295	259,802	3,823,950	899,096	3,823	8,169	1,161,193	374,843	320,905	291,379	109,998	7,259,453	53	384,751
TOTAL	54,440	5,251,757	16,100,884	9,331,202	35,567	111,603	9,635,064	4,117,041	4,107,565	2,345,488	630,635	51,721,246	11	587,741

EVALUATION BASED ON 1975-1989 ACTUAL

	361	362	364	365	366	367	368	369	370	371	373	Total
Total Retmts	54,440	5,251,757	16,100,884	9,331,202	35,567	111,603	9,635,064	4,117,041	4,107,565	2,345,488	630,635	51,721,246
Net Salvage, %	0	25	0	25	0	0	15	0	0	30	15	11
Net Salvage, $	0	1,312,939	0	2,332,801	0	0	1,445,260	0	0	703,646	94,595	5,889,241

DELOITTE HASKINS & SELLS DEPRECIATION SYSTEM - DSALG01 RELEASE 5.0

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KENTUCKY POWER COMPANY . 11- 2-1990

AVERAGE LIFE GROUP METHOD THEORETICAL RESERVE
ACCOUNT 35300000

AGE	VINTAGE YEAR	SURVIVING BALANCE 12/31/1989	REMAINING LIFE ASL CURVE 50.0 R0.5	RESERVE RATIO	THEORETICAL RESERVE
0.5	1989	1247738.	49.6904	0.00619	7725.
1.5	1988	574176.	49.0704	0.01859	10675.
2.5	1987	893616.	48.4521	0.03096	27665.
3.5	1986	1139198.	47.8355	0.04329	49316.
4.5	1985	1686248.	47.2206	0.05559	93733.
5.5	1984	78286.	46.6075	0.06785	5312.
6.5	1983	1200975.	45.9960	0.08008	96175.
7.5	1982	8064.	45.3860	0.09228	744.
8.5	1981	640224.	44.7777	0.10445	66869.
9.5	1980	15638250.	44.1709	0.11658	1823146.
10.5	1979	917014.	43.5655	0.12869	118010.
11.5	1978	88898.	42.9616	0.14077	12514.
12.5	1977	1186500.	42.3591	0.15282	181319.
13.5	1976	391512.	41.7579	0.16484	64538.
15.5	1974	1037.	40.5593	0.18881	196.
16.5	1973	16220.	39.9619	0.20076	3256.
17.5	1972	379846.	39.3658	0.21268	80787.
18.5	1971	402046.	38.7711	0.22458	90290.
19.5	1970	682067.	38.1780	0.23644	161268.
20.5	1969	9870865.	37.5865	0.24827	2450635.
21.5	1968	509774.	36.9969	0.26006	132573.
22.5	1967	237071.	36.4092	0.27182	64440.
23.5	1966	236739.	35.8237	0.28353	67122.
24.5	1965	494885.	35.2405	0.29519	146085.
25.5	1964	350263.	34.6598	0.30680	107462.
26.5	1963	957722.	34.0818	0.31836	304904.
27.5	1962	467496.	33.5066	0.32987	154212.
28.5	1961	188471.	32.9345	0.34131	64327.
29.5	1960	36134.	32.3654	0.35269	12744.
30.5	1959	109152.	31.7998	0.36400	39732.
31.5	1958	102410.	31.2376	0.37525	38429.
32.5	1957	6362.	30.6790	0.38642	2458.
33.5	1956	59095.	30.1241	0.39752	23491.

DELOITTE HASKINS & SELLS DEPRECIATION SYSTEM - DSALG01 RELEASE 5.0

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KENTUCKY POWER COMPANY 11- 2-1990

AVERAGE LIFE GROUP METHOD THEORETICAL RESERVE
ACCOUNT 35300000

AGE	VINTAGE YEAR	SURVIVING BALANCE 12/31/1989	REMAINING LIFE ASL CURVE 50.0 R0.5	RESERVE RATIO	THEORETICAL RESERVE
34.5	1955	107920.	29.5731	0.40854	44089.
35.5	1954	10322.	29.0261	0.41948	4330.
36.5	1953	94036.	28.4832	0.43034	40467.
37.5	1952	511233.	27.9445	0.44111	225510.
38.5	1951	244718.	27.4101	0.45180	110563.
39.5	1950	10028.	26.8801	0.46240	4637.
40.5	1949	102150.	26.3545	0.47291	48308.
41.5	1948	39284.	25.8333	0.48333	18987.
42.5	1947	3620.	25.3168	0.49366	1787.
43.5	1946	42757.	24.8048	0.50390	21545.
44.5	1945	201906.	24.2974	0.51405	103790.
45.5	1944	78195.	23.7946	0.52411	40983.
46.5	1943	8615.	23.2965	0.53407	4601.
47.5	1942	264003.	22.8030	0.54394	143602.
48.5	1941	31105.	22.3143	0.55371	17223.
49.5	1940	23256.	21.8301	0.56340	13102.
50.5	1939	32393.	21.3506	0.57299	18561.
51.5	1938	33393.	20.8756	0.58249	19451.
52.5	1937	156492.	20.4052	0.59190	92627.
53.5	1936	63281.	19.9393	0.60121	38045.
54.5	1935	10727.	19.4779	0.61044	6548.
55.5	1934	2984.	19.0208	0.61958	1849.
57.5	1932	6986.	18.1194	0.63761	4454.
59.5	1930	424895.	17.2348	0.65530	278436.
60.5	1929	136693.	16.7984	0.66403	90768.
		43439346.			7896418.
			NET SALVAGE VALUE(%)		25.
			RESERVE AFTER SALVAGE		5922313.
			REMAINING LIFE (YRS)		40.91