Exhibit No.
Issue: Depreciation
Witness: Donald S. Roff
Type of Exhibit: Direct Testimony
Sponsoring Party: Empire District Electric
Case No.
Date Testimony Prepared: October 2007

Before the Public Service Commission of the State of Missouri

Direct Testimony

of

Donald S. Roff

October 2007

DIRECT TESTIMONY
OF
DONALD S. ROFF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
CASE NO.

Q. PLEASE STATE YOUR NAME, TITLE, BUSINESS AFFILIATION AND ADDRESS.

A. My name is Donald S. Roff and I am President of Depreciation Specialty Resources ("DSR"). My business address is 2832 Gainesborough Drive, Dallas, Texas 75287-3483.

Q. WHAT ARE YOUR QUALIFICATIONS AND EXPERIENCE?

A. My qualifications and experience are described on Schedule DSR-1.

Q. HAVE YOU EVER TESTIFIED BEFORE THIS OR ANY OTHER REGULATORY BODY?

A. Yes. A listing of my regulatory appearances is contained on Schedule DSR-2.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by The Empire District Electric Company ("Empire" or "the Company") to present the results of a depreciation study that I conducted as of December 31, 2006. I have also been asked to provide a discussion of the basics of depreciation principles and practices as applies to a regulated entity.

Q. HAVE YOU PREPARED ANY ADDITIONAL SCHEDULES?

A. Yes, Schedule DSR-3 is the formal report of my depreciation study. The report presents a summary of the results and recommendations, a description of the study approach and process, some fundamental depreciation definitions and a Schedule of recommended depreciation rates.

Q. WERE THESE SCHEDULES PREPARED BY YOU, OR UNDER YOUR DIRECTION AND SUPERVISION?

A. Yes.

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY?

A. As shown on Table 1 of Schedule DSR-3 and summarized by function, my study results in the following comparison of depreciation rates:

Function	Existing Rate	Recommended Rate
Steam Production	1.86	2.10
Hydraulic Production	1.62	1.67
Other Production	2.46	2.27
Transmission Plant	2.38	3.18
Distribution Plant	3.60	3.62
General Plant	5.28	5.19
Total Electric Plant	2.90	3.01

As shown on Table 1 of Schedule DSR-3, application of my recommended depreciation rates to the December 31, 2006, depreciable balances, results in an increase in annual depreciation expense of about $1.38 million.

Q. WHAT FACTORS ARE DRIVING THIS INCREASE IN ANNUAL DEPRECIATION EXPENSE?

A. There are two primary elements which account for the increase in annual depreciation expense indicated by my study. The first element is longer lives, which have the effect of decreasing annual depreciation expense. The second element is the effect of negative net salvage, which has the effect of increasing annual depreciation expense. Both of these elements will be addressed separately in later sections of my testimony.

Q. WHAT IS DEPRECIATION?

A. The most widely recognized accounting definition of depreciation is that of the American Institute of Certified Public Accountants, which states:

> Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation.[1]

Q. WHAT IS THE SIGNIFICANCE OF THIS DEFINITION?

A. This definition of depreciation accounting forms the accounting framework under which my depreciation study was conducted. Several aspects of this definition are particularly significant:

- Salvage (net salvage) is to be recognized;
- The allocation of costs is over the useful life of the assets;
- Useful life must be estimated;
- Grouping of assets is permissible;
- Depreciation accounting is not a valuation process; and
- The cost allocation must be both systematic and rational.

[1] Accounting Research Bulletin No. 43, Chapter 9, Paragraph 5 (June 1953).

Q. PLEASE EXPLAIN THE IMPORTANCE OF THE TERMS "SYSTEMATIC AND RATIONAL".

A. Systematic implies the use of a formula. The formula used for calculating the recommended depreciation rates is shown on Page 13 of Schedule DSR-3. Rational means that the pattern of depreciation, in this case, the depreciation rate itself, must match either the pattern of revenues produced by the asset, or match the consumption of the asset. Since revenues are determined through regulation (versus produced by the asset), and for this study, revenues are projected to continue to be determined through regulation, asset consumption is directly measured and reflected in the calculation of depreciation rates. This measurement of asset consumption is accomplished by conducting a depreciation study.

Q. ARE THERE OTHER DEFINITIONS OF DEPRECIATION?

A. Yes. The Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts ("USOA") provides a series of definitions related to depreciation as shown on Page 7 of Schedule DSR-3. These definitions of depreciation make reference to asset consumption, and therefore relate very well to the accounting framework for depreciation. These definitions form the regulatory framework under which my depreciation study was conducted. It is my understanding that the Missouri Public Service Commission has adopted the FERC USOA.[2]

Q. WHY IS THIS CITING SIGNIFICANT?

[2] Commission Rule 4 CSR 240-20.030

A. This reference is significant because of the importance of General Instruction Number 11 of the USOA:

> "*Accounting to be on Accrual Basis*, A. The utility is required to keep its accounts on the accrual basis. This requires the inclusion in its accounts of all known transactions of appreciable amount which affect the accounts. If bills covering such transactions have not been received or rendered, the amounts shall be estimated and appropriate adjustments made when the bills are received. B. When payments are made in advance for items such as insurance, rent, taxes or interest the amount applicable to future periods shall be charged to account 165, Prepayments, and spread over the periods to which applicable by credits to account 165 and charges to the accounts appropriate for the expenditure."[3]

Thus the Company is required to maintain its books on an accrual basis. This requirement has particular significance to depreciation accounting and the inclusion of net salvage in the depreciation rate formula. Accrual accounting embodies the accounting principle of matching, which is the correlation between revenues and expenses. With respect to depreciation expense, we are concerned with the allocation of total cost, including net salvage, over time.

Q. DO YOU HAVE ANY AUTHORITATIVE SOURCE THAT ADDRESSES THIS TOPIC?

A. Yes. The following quotation directly address this topic:

> Under presently accepted concepts, the amount of depreciation to be accrued over the life of an asset is its original cost less net salvage. Net salvage, as the name implies, is the difference between the gross salvage that will be obtained when the asset is disposed of and the cost of removing it. Positive net salvage occurs when gross salvage exceeds cost of removal, and negative net salvage occurs when cost of removal exceeds gross salvage. Thus the intent of the present concept is to allocate the net

[3] 18 CFR Part 101.

> cost of an asset to annual accounting periods, making due allowance for the net salvage, positive or negative, that will be obtained when the asset is retired. This concept carries with it the thought that ownership of property entails the responsibility for its ultimate abandonment or removal. Hence if current users of the property benefit from its use, they should pay their pro rata share of the costs involved in the abandonment or removal of the property.
>
> This treatment of salvage is in harmony with generally accepted accounting practices and tends to remove from the income statement fluctuations caused by erratic, although necessary, abandonment and uneconomical removal operations. It also has the advantage that current consumers pay a fair share, even though estimated, of costs associated with the property devoted to their service.[4]

This quotation addresses several key accounting and ratemaking issues. First and foremost, net salvage is an appropriate component of depreciation. Second, inclusion of net salvage into depreciation results in a fair and equitable allocation of cost. Third, from a ratemaking perspective, inclusion of net salvage in depreciation expense fulfills the regulatory precept of having customers pay their fair share of costs of the life of the property devoted to their service. So such treatment is both good accounting and good ratemaking. The USOA instructions clearly intended cost of removal and salvage to be components of depreciation as they must be charged to Account 108, Accumulated Provision for Depreciation.[5]

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[4] *Public Utility Depreciation Practices*, NARUC, 1968 Edition, page 24.

[5] 4 CSR 240-20.030 3(H). Charge original cost less net salvage to account 108., when implementing the provisions of Part 101 Electric Plant Instructions 10.F. and paragraph 15.060.10.F. The book cost less net salvage of depreciable electric plant retired shall be charged in its entirety to account108. Accumulated Provision for Depreciation of Electric Plant in Service (Account 110, Accumulated Provision for Depreciation and Amortization of Electric Utility Plant, in the case of Nonmajor utilities).

Q. WHAT ARE MORTALITY CHARACTERISTICS?

A. Mortality characteristics are the basic parameters necessary to calculate depreciation rates. They encompass average service life, retirement dispersion (the various ages at which assets within a group retire) defined by Iowa type curves, and net salvage allowance. Net salvage is the difference between salvage and cost of removal. If cost of removal exceeds salvage, negative net salvage occurs.

Q. HOW DOES YOUR DEPRECIATION STUDY RECOGNIZE ASSET CONSUMPTION?

A. For all asset categories, asset consumption (retirement dispersion) is defined by the use of Iowa type curves and related average service lives.

Q. WHAT IS RETIREMENT DISPERSION?

A. Retirement dispersion merely recognizes that groups of assets have individual assets of different lives, i.e., each asset retires at differing ages. Retirement dispersion is the scattering of retirements by age around the average service life for each group of assets.

Q. PLEASE DESCRIBE HOW THESE ELEMENTS WERE DETERMINED AND UTILIZED IN YOUR DEPRECIATION STUDY.

A. A depreciation study consists of four distinct, yet related phases - data collection, analysis, evaluation and rate calculation. Data collection refers to the gathering of historical accounting information for use in the other phases. Company personnel were responsible for this effort. Analysis refers to the statistical processing of the data collected in the first phase. There are two separate analysis procedures, one for life, and one for salvage and cost of removal, and these were conducted by me. The evaluation phase incorporates the information developed in the data collection and analysis phases to determine the applicability of the historical relationships developed in these phases to the future, and was conducted jointly by DSR and Company personnel. The rate calculation phase merely utilizes the parameters developed in the other phases in the computation of the recommended depreciation rates, and was accomplished by me.

Q. PLEASE DISCUSS HOW NET SALVAGE WAS ADDRESSED IN YOUR STUDY OF PRODUCTION PLANT.

A. Net salvage occurs in the form of interim net salvage. Interim net salvage refers to the salvage and removal costs associated with interim retirements. Terminal net salvage refers to the ultimate dismantlement of plant facilities, which includes both salvage and removal cost, and was not addressed in this depreciation study.

Q. HOW WERE THE INTERIM NET SALVAGE FACTORS DETERMINED?

A. Interim net salvage factors were determined by an analysis of historical retirement, salvage and cost of removal activity. The interim net salvage factor was calculated by subtracting cost of removal from salvage and dividing by retirements. An interim net salvage factor was determined for each primary asset account and is shown in Column 12 of Table 2 and 3 of Schedule DSR-3.

Q. PLEASE DISCUSS THE LIFE ANALYSIS PROCESS UTILIZED FOR ALL ASSET CATEGORIES.

A. Retirement experience was collected basically from inception through 2006 updating the historical data files used for the prior depreciation study. These data were arrayed into a format suitable for life analysis. Life tables were developed and Iowa type curves were fitted to the historical summaries. Life analysis measures history and results in the determination of an estimate of average service life for each asset category. The actual analysis involves "converting" historical accounting data into mortality tables. In very simple terms, one is looking at the portion surviving at each age for every asset category.

Q. HOW IS THIS "CONVERSION" ACCOMPLISHED?

A. Because the age of retirement is known, as well as the age of the surviving balances, retirements of like ages are related to the asset amounts available to be retired at the same age. These retirement ratios are then related to the portion surviving at the beginning of each successive age, thus building what is known as the observed life table. When converted to a graphical format, this plot becomes the observed survivor curve.

Q. WHAT IS AN OBSERVED SURVIVOR CURVE?

A. An observed survivor curve is a plot, or graph of the recorded retirement and survivor history as a function of age. This observed curve is essentially a graphical representation of history.

Q. HOW IS THE OBSERVED CURVE USEFUL?

A. The observed curve is useful for two reasons. The area underneath the survivor curve is, by definition, equal to average service life. First, if one could find a matching empirical curve, such as the Iowa-type curves, an estimate of average service life can be made. Second, this estimate then becomes the starting point in the evaluation phase of a depreciation study.

Q. WHY DO YOU SAY THAT THIS OBSERVED CURVE IS THE "STARTING POINT" IN THE EVALUATION PROCESS?

A. The observed curve is only the starting point in the evaluation process because it only represents a pictorial view of history. In order to develop appropriate average service lives for depreciation rate calculation purposes, this history must be understood, and combined with expectations for the future.

Q. HOW IS THE SURVIVOR CURVE USED IN YOUR STUDY?

A. The observed survivor curve derived from the Company history is matched to generalized known curves, such as the Iowa-type curves to provide an estimate of average service life.

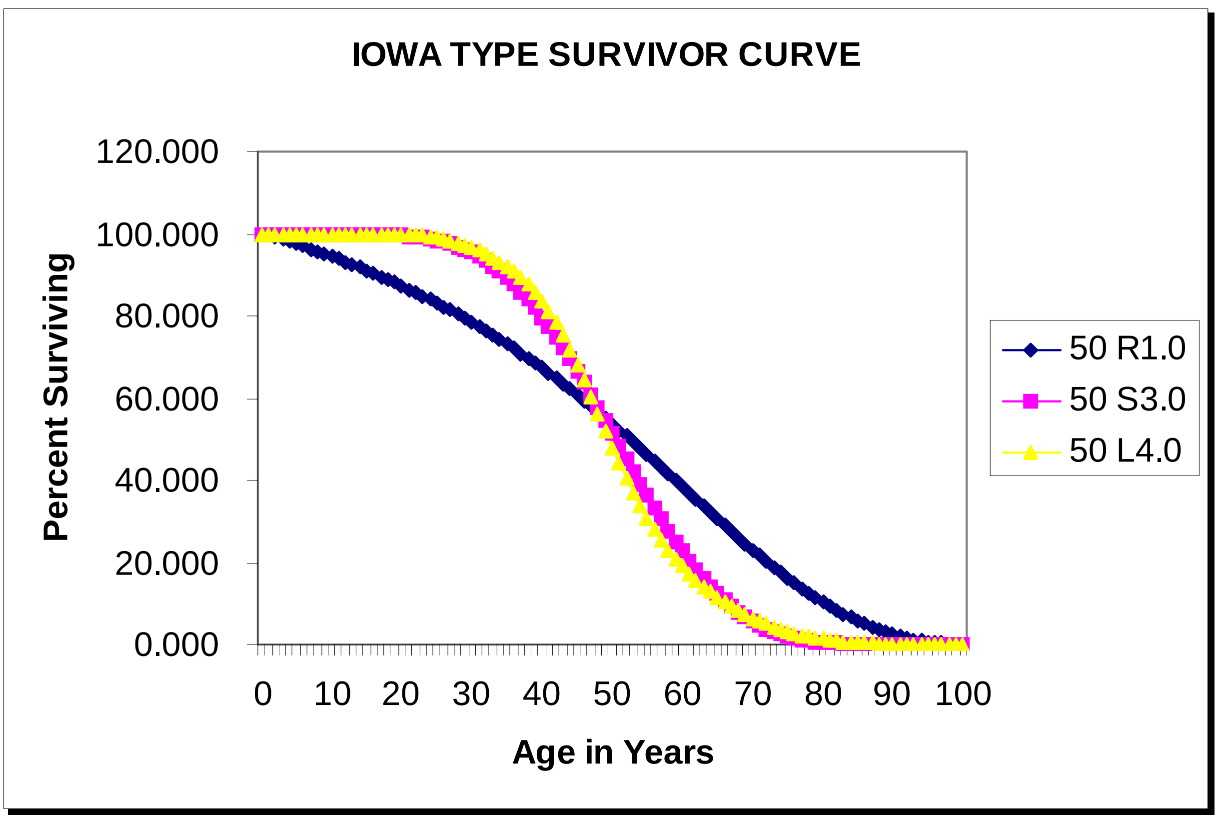
Q. WHAT ARE IOWA-TYPE CURVES?

A. The Iowa-type curves were devised empirically over 60 years ago by the Engineering Research Institute at what is now Iowa State University to provide a set of standard definitions of retirement dispersion. Retirement dispersion merely recognizes that groups of assets have individual assets of different lives, i.e., each asset retires at differing ages. Retirement dispersion is the scattering of retirements by age around the average service life for each group of assets. Standard dispersion patterns are useful because they make calculations of the remaining life of existing property possible and allow life characteristics to be compared.

The Engineering Research Institute collected dated retirement information on many types of industrial and utility property and devised empirical curves that matched the range of patterns found. A total of 18 curves were defined. There were six left-skewed, seven symmetrical and five right-skewed curves, varying from wide to narrow dispersion patterns. The Iowa-curve naming convention allows the analyst to relate easily to the patterns. The left-skewed curves are known as the "L series", the symmetrical as the "S series" and the right-skewed as the "R series." A number identifies the range of dispersion. A low number represents a wide pattern and a high number a narrow pattern. The combination of one letter and one number defines a unique dispersion pattern. The original 10 type-curves were expanded to include some "half-curves". The half-curves are interpolations between adjacent Iowa-type curves. For example, an R1.5 pattern lies between an R1 pattern and an R2 pattern.

Q. HOW DO IOWA-TYPE CURVES PROVIDE AN ESTIMATE OF AVERAGE SERVICE LIFE?

A. Iowa-type curves and average service lives are inseparable. That is, the shape of the survivor curve defines the average service life. As mentioned above, the area underneath the survivor curve is equal to average service life. Thus the average service life cannot be described without also defining an Iowa-type curve, i.e., shape. An example is shown below:



Q. WHAT DOES THIS CHART ILLUSTRATE?

A. This chart illustrates that Iowa type survivor curves are composed of two elements, the curve shape and the average service life. Each of the above survivor curves (R1, S3 and L4) has the same average service life, in this case 50 years.

Q. HOW WERE THE IOWA CURVE SHAPES AND AVERAGE SERVICE LIFE SELECTIONS MADE?

A. Summaries of the individual asset category life analysis indications were prepared and discussed with Company personnel. Anomalies and trends were identified and engineering and operations input were requested where necessary. A single average service life and Iowa curve was selected for each asset category reflecting the combination of the historical results and the additional information obtained from the engineering, accounting and operations personnel. This process is a part of the evaluation phase of the depreciation study.

Q. WHAT IS THE EVALUATION PHASE OF A DEPRECIATION STUDY?

A. The evaluation phase of a depreciation study combines the results of historical analyses with information regarding the age of property retired, the age of property surviving, knowledge of the types of assets surviving and being retired, and Company experience and expectations, all coupled with the knowledge, experience and judgment of the depreciation analyst. The goal is to give recognition to these factors and their influence upon historical indications and the applicability of such historical indications to plant surviving into the future. Both Empire and DSR personnel participated in this process.

Q. WHAT TYPES OF INFORMATION ARE DISCERNED IN THIS PHASE OF THE DEPRECIATION STUDY?

A. Information discerned includes the specific types of equipment being retired and added, the relative age of property surviving and retiring and Company plans and expectations regarding the property being evaluated, as well as forces influencing the salvage obtainable and removal costs associated with retired assets.

Q. CAN YOU PROVIDE SPECIFIC EXAMPLES OF THE INFORMATION THAT WAS UTILIZED IN YOUR STUDY?

A. Yes. One example would be the impact of insurance proceeds on the line accounts for Transmission and Distribution Plant. Insurance proceeds were eliminated from the analysis of salvage and cost of removal experience. Insurance proceeds are not a component of depreciation.

Q. HOW WAS NET SALVAGE DETERMINED FOR TRANSMISSION, DISTRIBUTION AND GENERAL PLANT?

A. Historical retirement, salvage and cost of removal activity was collected and analyzed for the period 1992-2006 for each asset category. Both salvage and cost of removal were divided by retirements on an annual basis to develop salvage and cost of removal percentages. Shrinking and rolling band analyses were also conducted to illustrate any trends that might exist. A single net salvage percentage was developed for each asset category reflecting the history, trends and Company expectations.

Q. WHAT ARE SHRINKING AND ROLLING BAND ANALYSES?

A. These are two techniques to help discern trends in the historical data. A shrinking band begins with the full experience period and successively eliminates the oldest year's activity, thus illustrating trends as one moves through time. Rolling bands are useful because salvage, cost of removal and retirements are not always recorded in the same accounting period. Rolling band analysis combines activity for fixed periods, in the case of this study, three years. Three years was selected because virtually all salvage and cost of removal activity occurs within three years of the recording of the retirement. These three-year combined activities are then "rolled" forward one year at a time, and similarly aid in identifying trends as with the shrinking bands. Examples of rolling bands would be 1992-1994, 1993-1995, 1994-1996, etc.

Q. WERE THERE ANY TRENDS EVIDENT FROM THE DATA CONTAINED IN THE SALVAGE AND COST OF REMOVAL ANALYSYES?

A. In general, salvage is declining and cost of removal is increasing.

Q. WHY IS THIS THE CASE?

A. I believe that there are two reasons for this occurrence. First, both salvage and cost of removal are a function of the age of property retired. Younger property is more valuable as it can be reused. In general, we have seen longer lives for most of the mass assets contained in the Transmission and Distribution Plant functions.

Older property retirements have less salvage value and cost more to remove relative to their original cost due to cost escalation over time. The second reason is there are just more environmental requirements that impact the level of cost of removal. This creates an additional cost not reflected in the existing depreciation rates.

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY FOR PRODUCTION PLANT?

A. For Steam Production Plant, there is an increase in the accrual rate from the existing depreciation rate of 1.86% to the recommended depreciation rate of 2.10%. The increase is primarily due the effect on net salvage. For Hydraulic Production Plant, the composite depreciation rate increased from 1.62% to 1.67%. For Other Production Plant, there is a decrease in the depreciation rate from the existing rate of 2.46% to the recommended depreciation rate of 2.27%. This is due primarily to the use of longer average service lives.

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY FOR TRANSMISSION PLANT?

A. For the Transmission Plant function, the depreciation rate increases from 2.38% to 3.18%. The composite average service life decreases from 56.7 years to 52.7 years. Net salvage decreases from 35% to negative 65%. The net dollar impact of the change in depreciation rate is an increase in annual depreciation of approximately $1.33 million.

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY FOR DISTRIBUTION PLANT?

A. For the Distribution Plant function, the depreciation rate increases from 3.60% to 3.62%. The composite average service life increases from 44.8 years to 47.7 years. Net salvage decreases from 55% to negative 67%. The net dollar impact of the change in rate is an increase in annual depreciation expense of approximately $151 thousand.

Q. ARE YOU PROPOSING ANY CHANGES IN DEPRECIATION METHODOLOGY FOR ANY OF THE PLANT ACCOUNTS?

A. Yes. I recommend that Empire change from a depreciation accounting methodology to a vintage amortization accounting methodology for certain plant accounts.

Q. TO WHICH ACCOUNTS DOES THIS RECOMMENDED CHANGE APPLY?

A. The vintage amortization accounting methodology would be applied to the following accounts:

Account	Description
391.1	Office Furniture and Equipment
391.2	Computer Equipment
393.0	Stores Equipment
394.0	Tools, Shop and Garage Equipment
395.0	Laboratory Equipment
397.0	Communication Equipment
398.0	Miscellaneous Equipment

Q. WHY IS THIS CHANGE BEING PROPOSED FOR THESE ACCOUNTS?

A. This change is being proposed for three reasons. First, these accounts generally represent items of small dollar unit prices, with similar mortality characteristics. Second, the percentage of total plant represented by these accounts is minimal, only about two and one-quarter percent of total depreciable plant balances. Third, the proposed method of accounting will eliminate the individual recording and tracking by Property Accounting of thousands of items.

Q. PLEASE EXPLAIN THE PROPOSED ACCOUNTING METHODOLOGY?

A. The Company would use a vintage (year of addition) accounting methodology to record assets in these accounts. Under the proposed method of accounting, amounts recorded as additions to utility plant would be recorded in the Continuing Property Records (CPR) of the Company at a vintage account level only (i.e. total by year), as opposed to tracking assets individually. These vintage amounts would then be amortized over their average service life, as determined in this depreciation study. When each vintage amount reaches its average service life (i.e. the amount is fully amortized), the original cost in that vintage amount will be retired from utility plant in service.

Q. HAS THE VINTAGE ACCOUNTING METHODOLOGY BEEN APPROVED IN OTHER JURISDICTIONS OF WHICH YOU ARE AWARE?

A. Yes, virtually all of my clients utilize this methodology for the selected plant accounts. I am not aware of any state jurisdiction that has not authorized this accounting methodology. In addition, the Federal Energy Regulatory Commission granted a blanket approval for this methodology in Accounting Release AR-15, provided that certain conditions are met.

Q. WHAT ARE THOSE CONDITIONS?

A. These conditions are that the individual classes of assets contain high volume, low value items; that there is no change in existing retirement unit definitions; that the cost of each vintage group is amortized to depreciation expense over its useful life; that there is no change in depreciation rates resulting from the adoption of vintage amortization accounting; that interim retirements are not recognized; that salvage and cost of removal is included in the accumulated provision for depreciation and assigned to the oldest vintage first; and that retirements are recorded for those assets whose age exceeds average service life at the time of adoption. The Company's proposal will meet all of these conditions upon approval of the depreciation rates recommended in this proceeding for these General Plant asset categories.

Q. PLEASE EXPLAIN HOW THE VINTAGE AMORTIZATION AMOUNTS AND VINTAGE AMORTIZATION RATES WERE DEVELOPED FOR THESE ASSET CATEGORIES.

A. The assets categories, selected from the General Plant function, represent groups with many, small dollar property items. Mortality analyses were conducted for each of the accounts. These analyses were the basis for the vintage amortization periods. For those vintages that were older than the vintage amortization period, a retirement was made to reduce the plant in service base as well as the accumulated depreciation balance. The remaining investment will be amortized on a straight-line basis over the expected vintage amortization lives using the rates shown in

Table 1A. In order to mitigate the effect of the shorter lives used for vintage amortization, the Company proposes to implement this methodology in a two-step process. The first step will be to use the straight-line vintage amortization rates computed by dividing 100% by the vintage amortization lives. These vintage amortization rates will be applied to the balances (subject to vintage amortization accounting) for each asset category. The second step will be to recover the unamortized net plant over a period of four years. These annual amounts are shown in Table 1A. These amounts were determined by taking the difference between the theoretical reserve and the allocated accumulated provision for depreciation and dividing by four.

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY FOR GENERAL PLANT?

A. For the General Plant function, the depreciation rate decreases from 5.28% to 5.19%. The composite average service life increases from 22.9 years to 23.2 years. Net salvage decreases from 6% to 5%. The net dollar impact of the change in rate is a decrease in annual depreciation expense of approximately $22 thousand.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I recommend that Empire adopt the depreciation rates shown in Column 6 of Table 1. I base this recommendation on the fact that I have conducted a comprehensive depreciation study, giving appropriate recognition to historical experience, recent trends and Company expectations. My study results in a fair and reasonable level of depreciation expense which, when incorporated into a revenue stream, will provide the Company with adequate capital recovery until such time as a new depreciation study indicates a need for change. I also recommend that Empire implement vintage amortization accounting using the methodology described herein and the rates at Table 1A. The vintage amortization periods shown in Table 3 are reasonable and consistent with the types of assets contained in these categories.

Q. DOES THIS COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Academic Background

Donald S. Roff graduated from Rensselaer Polytechnic Institute with a Bachelor of Science degree in Management Engineering in 1972.

Mr. Roff has also received specialized training in the area of depreciation from Western Michigan University's Institute of Technological Studies. This training involved three forty-hour seminars on depreciation entitled "Fundamentals of Depreciation", "Fundamentals of Service Life Forecasting" and "Making a Depreciation Study" and included such topics as accounting for depreciation, estimating service life, and estimating salvage and cost of removal.

Employment and Professional Experience

Following graduation, Mr. Roff was employed for eleven and one-half years by Gilbert Associates, Inc., as an engineer in the Management Consulting Division. In this capacity, he held positions of increasing responsibility related to the conduct and preparation of various capital recovery and valuation assignments.

In 1984, Mr. Roff was employed by Ernst & Whinney and was involved in several depreciation rate studies and utility consulting assignments.

In 1985, Mr. Roff joined Deloitte Haskins & Sells (DH&S), which, in 1989, merged with Touche Ross & Co. to form Deloitte & Touche. In 1995, Mr. Roff was appointed as a Director with Deloitte & Touche.

In November, 2005, Mr. Roff formed Depreciation Specialty Resources to serve the utility industry.

During his tenure with Gilbert Associates, Inc., Ernst & Whinney, DH&S and Deloitte & Touche, Mr. Roff has participated in or directed depreciation studies for electric, gas, water and steam heat utilities, pipelines, railroad and telecommunication companies in over 30 states, several Canadian provinces and Puerto Rico. This work requires an in-depth knowledge of depreciation accounting and regulatory principles, mortality analysis techniques and financial practices. At these firms, Mr. Roff has had varying degrees of responsibility for valuation studies, development of depreciation accrual rates, consultation on the unitization of property records, and other studies concerned with the inspection and appraisals of utility property, preparation of rate case testimony and support exhibits, data responses and rebuttal testimony, in addition to appearing as an expert witness.

Industry and Technical Affiliations

Mr. Roff is a registered Professional Engineer in Pennsylvania (by examination).

Mr. Roff is a member of the Society of Depreciation Professionals and a Certified Depreciation Professional, and a Technical Associate of the American Gas Association (A.G.A.) Depreciation Committee. He currently serves as the lead instructor for the A.G.A.'s Principles of Depreciation Course.

DONALD S. ROFF

TESTIMONY EXPERIENCE

CASE NO.	DATE	COMPANY	JURISDICTION	SUBJECT
Docket No. 93-3005	July 1993	Southwest Gas Corporation	Nevada	Gas Depreciation Rates
Docket No. 93-3025	July 1993	Southwest Gas Corporation	Nevada	Gas Depreciation Rates
Docket No. 12820	June 1994	Central Power and Light Company	Texas	Electric Depreciation Rates
Case No. U-10380	Dec 1994	Consumers Power Company	Michigan	Gas Depreciation Rates and Accounting
Cause No. 39938	April 1995	Indianapolis Power & Light Company	Indiana	Electric Depreciation Rates
Case No. U-10754	July 1995	Consumers Power Company	Michigan	Electric Depreciation Rates and Accounting
Docket No. 13369	Aug 1995	West Texas Utilities Company	Texas	Electric Depreciation Rates
Docket No. 95-02116	Sept 1995	Chattanooga Gas Company	Tennessee	Gas Depreciation Rates
Docket No. 95-715-G	Oct 1995	Piedmont Natural Gas Company	South Carolina	Gas Depreciation Rates
Docket No. 14965	Dec 1995	Central Power and Light Company	Texas	Electric Depreciation Rates
Cause No. 40395 (I)	Feb 1996	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
GUD NO. 8664	Oct 1996	Lone Star Pipeline Company	Texas	Gas Depreciation Rates
Docket No. 96-360-U	Nov 1996	Entergy Arkansas Inc.	Arkansas	Electric Depreciation Rates
Docket No. 16705	Nov 1996	Entergy Gulf States Inc.	Texas	Electric Depreciation Rates/Competitive Issues
Docket No. ER-97-394	Mar 1997	Missouri Public Service	Missouri	Electric Depreciation Rates/Competitive Issues
Docket No. U-22092	Mar 1997	Entergy Gulf States Inc.	Louisiana	Electric Depreciation Rates/Competitive Issues
Docket No. 97-00982	May 1997	Chattanooga Gas Company	Tennessee	Gas Depreciation Rates
Cause No. 40395 (II)	June 1997	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
Case No. U-11509	Sept 1997	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Docket No. ER98-11	Sept 1997	Long Island Lighting Company	FERC	Electric Depreciation Rates
Docket No. 8390-U	Dec 1997	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Cause No. 41118	Mar 1998	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
Case No. U-11722	Oct 1998	Detroit Edison Company	Michigan	Electric Depreciation Rates
Docket No. 98-2035-03	Nov 1998	PacifiCorp	Utah	Electric Depreciation Rates
Docket No. 99-4006	April 1999	Nevada Power Company	Nevada	Electric Depreciation Rates
GUD Docket No. 9030	March 2000	Atmos Energy Corporation	Texas	Gas Depreciation Rates and Accounting
GUD Docket No. 9145	April 2000	TXU Gas Distribution	Texas	Gas Depreciation Rates
City of Tyler	Dec 2000	Reliant Energy Entex	Texas	Gas Depreciation Rates and Accounting
Docket No. U-24993	March 2001	Entergy Gulf States Inc.	Louisiana	Electric Depreciation Rates and Accounting
Docket Nos. GR01050328/GR01050297	May 2001	Public Service Electric & Gas	New Jersey	Gas Depreciation Rates and Accounting
Case No. U-12999	July 2001	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Docket No. 01-10002	Oct 2001	Nevada Power Company	Nevada	Electric Depreciation Rates
Docket No. 14618-U	Nov 2001	Savannah Electric and Power Company	Georgia	Electric Depreciation Rates
Docket No. 01-11031	Dec 2001	Sierra Pacific Power Company	Nevada	Electric Depreciation Rates
Docket No. 010949-EL	Jan 2002	Gulf Power Company	Florida	Electric Depreciation Rates
Docket No. 14311-U	Jan 2002	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Docket No. UD-00-2	March 2002	Entergy New Orleans, Inc.	New Orleans	Electric Depreciation Accounting
Cause No. PUD200200166	May 2002	Reliant Energy Entex	Oklahoma	Gas Depreciation Rates and Accounting
Docket No. 01-243-U	June 2002	Reliant Energy Entex	Arkansas	Gas Depreciation Rates and Accounting
Docket No. 02-035-12	Oct 2002	PacifiCorp	Utah	Electric Depreciation Rates
Docket No. 20000-ER-2-192	Oct 2002	PacifiCorp	Wyoming	Electric Depreciation Rates
Docket No. UE-021271	Oct 2002	PacifiCorp	Washington	Electric Depreciation Rates
Docket No. UM-1064	Oct 2002	PacifiCorp	Oregon	Electric Depreciation Rates
Docket No. PAC-E-02-5	Oct 2002	PacifiCorp	Idaho	Electric Depreciation Rates
Docket No. 02-0391	Oct 2002	Hawaiian Electric Company, Inc.	Hawaii	Electric Depreciation Rates and Accounting
Docket No. 03-ATMG-1036-RTS	June 2003	Atmos Energy Corporation	Kansas	Gas Depreciation Rates and Accounting
Docket No. 02-0391	Aug 2003	Hawaiian Electric Company, Inc.	Hawaii	Electric Depreciation Rates and Accounting
Cause No. 42458	Sept 2003	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates and Accounting
Docket No. 03-ATMG-1036-RTS	Nov 2003	Atmos Energy Corporation	Kansas	Gas Depreciation Rates and Accounting
Case No. 12999	Dec 2003	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Case No. 12999	Feb 2004	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Docket No. ER-2004-0570	Apr 2004	The Empire District Electric Company	Missouri	Electric Depreciation Rates and Accounting
Docket No. 04-100-U	Apr 2004	The Empire District Electric Company	Arkansas	Electric Depreciation Rates and Accounting
Docket No. PUE 2003-00597	Aug 2004	Atmos Energy Corporation	Virginia	Gas Depreciation Rates and Accounting
Docket No. 18638-U	Oct 2004	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Docket No. ER-2004-0570	Nov 2004	The Empire District Electric Company	Missouri	Electric Depreciation Rates and Accounting
Docket No. ER-2004-0570	Nov 2004	The Empire District Electric Company	Missouri	Electric Depreciation Rates and Accounting
Cause No. 200400610	Jan 2005	Oklahoma Natural Gas Company	Oklahoma	Gas Depreciation Rates and Accounting
Docket No. 18638-U	March 2005	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Docket No. 20298	May 2005	Atmos Energy Corporation	Georgia	Gas Depreciation Rates and Accounting
Cause No. 200400610	June 2005	Oklahoma Natural Gas Company	Oklahoma	Gas Depreciation Rates and Accounting
Docket No. 20298	Oct 2005	Atmos Energy Corporation	Georgia	Gas Depreciation Rates and Accounting
Case No. GR-2006-0387	Apr 2006	Atmos Energy Corporation	Missouri	Gas Depreciation Rates and Accounting
GUD Docket No. 9670	Nov 2006	Atmos Energy Corporation	Texas	Gas Depreciation Rates and Accounting
Case No. 20060-00464	Dec 2006	Atmos Energy Corporation	Kentucky	Gas Depreciation Rates and Accounting
Docket No. 07-00105	July 2007	Atmos Energy Corporation	Tennessee	Gas Depreciation Rates and Accounting

THE EMPIRE DISTRICT ELECTRIC COMPANY

Book Depreciation Study
As of December 31, 2006

September 2007

Ms. Laurie A. Delano
Controller, Asst. Secretary and Treasurer
The Empire District Electric Company
602 Joplin Street
Joplin, Missouri 64802

Dear Ms. Delano:

In accordance with your request and with the cooperation and participation of your staff, a book depreciation study of The Empire District Electric Company ("Empire" or "the Company") electric properties has been conducted. The study covered all depreciable and amortizable property and recognized addition and retirement experience through December 31, 2006. The purpose of the study was to determine if the existing depreciation rates from the 2002 Depreciation Study remain appropriate for the property and, if not, to recommend changes. Changes were found to be needed and are recommended. The changes in aggregate cause an increase in depreciation rates used to calculate the annual depreciation expense.

A comparison of the effect of the existing rates and the recommended rates is shown below, based on depreciable plant balances as of December 31, 2006:

Function	Composite Depreciation Rate	
	Existing	Recommended
	%	%
Steam Production	1.86	2.10
Hydraulic Production	1.62	1.67
Other Production	2.46	2.27
Transmission	2.38	3.18
Distribution	3.60	3.62
General	5.28	5.19
Total	2.90	3.01

The summary above is taken from Schedule 1, which shows the annual depreciation amounts calculated from the existing rates and the recommended account rates and the differences. Based upon the December 31, 2006 depreciable balances, the recommended depreciation rates will result in an increase in annual depreciation provisions of $1,381,446 or 3.9%. The study results are being driven by an increase in depreciation rates for Steam and Hydraulic Production, Transmission and Distribution Plant, with an offset for a decrease in depreciation rates for Other Production and General Plant.

Schedule 1A shows the depreciation rate comparisons for Plant Accounts that are recommended for Amortization Accounting, for which a more detailed explanation can be found under the section of this report entitled “Amortization Accounting”. The existing depreciation rates are shown on Column 4. However, since we are recommending amortization accounting, our recommended amortization rates are shown in Schedule 1A, Column 6. Column 8 represents additional amortization expense due to a four-year recovery of net unrecovered amortization amounts when moving to amortization accounting. The annual increase related to amortization, as shown in Column 10, is $547,662. After the recovery period, only the Schedule 1A, Column 6 recommended amortization rates will be applicable in calculating the amortization amounts.

Schedules 2 and 3 present a comparison of the existing and recommended mortality characteristics, as well as the development of the cost of removal accrual rate, and the development of the salvage accrual rate. Schedule 1C presents the development of the existing composite depreciation rates.

Schedules 2 and 3 show the mortality characteristics used to calculate the existing and recommended depreciation rates. Schedule 3A shows the lives to be used for those accounts being amortized. The recommended depreciation rates are straight-line over life measured by time using the average life group (ALG) procedure and the whole life technique.

The net increase of $1,929,108, or 5.1%, is the result of changes in the depreciation rates from Schedule 1, an increase of $1,381,446, and due to amortization accounting from Schedule 1A, an increase of $547,662.

The recommended depreciation rates for Production Plant are calculated in a manner similar to that used for determining average service life as in the existing rates. A life analysis was performed matching Empire's historical experience to the Iowa curves. Actuarial analysis is discussed below. A net salvage allowance was incorporated based upon an analysis of historical experience and represents normal cost of removal and salvage associated with plant retirements. This is different from the terminal net salvage proposed by Empire in its prior depreciation study.

The existing and recommended depreciation rates for Transmission, Distribution and General Plant are calculated on a whole-life basis using the Average Life Group ("ALG") calculation procedure. Appendix A provides a discussion of the basis for significant changes in annual depreciation rates compared with the existing depreciation rates.

The following sections of this report describe the methods of analysis used and the bases for the conclusions reached. The remainder of the report will present the results and recommendations for action by the Company.

We appreciate this opportunity to serve The Empire District Electric Company and would be pleased to meet with you to discuss further the matters presented in this report, if you desire.

Yours truly,

Donald S. Roff
President

PURPOSE OF DEPRECIATION

Book depreciation accounting is the process of recognizing in financial statements the consumption of physical assets in the process of providing a service or a product. Generally accepted accounting principles require the recording of depreciation to be systematic and rational. To be systematic and rational, depreciation should, to the extent possible, match either the consumption of the facilities or the revenues generated by the facilities. Accounting theory requires the matching of expenses with either consumption or revenues to ensure that financial statements reflect the results of operations and changes in financial position as accurately as possible. The matching principle is often referred to as the "cause and effect" principle; thus, both the cause and the effect are required to be recognized for financial accounting purposes. This study was conducted in a manner consistent with the matching principle of accounting.

Because utility revenues are determined through regulation, and this study assumes that such regulation will continue, asset consumption is not automatically in revenues. Therefore, the consumption of utility assets must be measured directly by conducting a book depreciation study to accurately determine the mortality characteristics of the assets.

Matching is also an essential element of basic regulatory philosophy, and it has become known as "intergenerational customer equity". Intergenerational customer equity means the costs are borne by the generation of customers that caused them to be incurred, not by some earlier or later generation. This matching is required to ensure that the charges to customers reflect the actual costs of providing service.

DEPRECIATION DEFINTIONS

The electric utility Uniform System of Accounts ("USOA") of the Federal Energy Regulatory Commission ("FERC") followed by the Company states that:

> "Depreciation", as applied to depreciable utility plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility 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 net salvage value of utility plant.
>
> "Net salvage value" means the salvage value of property retired less the cost of removal.
>
> "Salvage value" means the amount received for the property retired, less any expenses incurred in connection with the sale or in preparing the property for sale or, if retained, the amount at which the material recoverable is chargeable to materials and supplies, or other appropriate account.
>
> "Cost of removal" means the cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including the cost of transportation and handling incidental thereto.

As is clear from the wording of the salvage value and the cost of removal definitions, it is the salvage that will actually be received and the cost of removal that will actually be incurred, both measured at the price level at the time of receipt or incurrence that is required to be recognized in the depreciation rates of Empire. It should be noted that terminal net salvage for the Production facilities is not addressed in this study.

These definitions are consistent with the purpose of depreciation, and the study reported here was conducted in a manner consistent with both.

ACCOMPLISHMENT OF ACCOUNTING AND REGULATORY PRINCIPLES

Utility depreciation accounting is a group concept. Inherent in this concept is the assumption that all property is fully depreciated at the time of retirement, regardless of age, and there is no attempt to record the depreciation applicable to individual components of the groups. The depreciation rates are based on the recognition that each depreciable property group has an average service life. However, very little of the property group is "average". The group carries with it recognition that most property will be retired at an age less than or greater than the average service life. This study recognized the existence of this variation through the identification of Iowa-type retirement dispersions. The Average Life Group ("ALG") procedure of depreciation rate calculation was selected for Transmission, Distribution and General Plant, which is the same procedure used in calculating the existing rates. The ALG procedure ensures that the recording of depreciation for the property is over the useful life of the group. Consistent with the last approved study for Empire, the whole life rate calculation technique was selected.

The depreciation rate calculation procedure, used for all categories of Production Plant, results in depreciation provisions that will adequately accomplish the basic accounting principle, that the timing of expenses should match that of revenues, and the basic depreciation accounting principle that the cost of all additions and retirements be fully recovered at the time of retirement. Terminal net salvage for the Production facilities is not addressed in this study.

THE BOOK DEPRECIATION STUDY

Implementation of a policy toward book depreciation that recognizes the purpose of depreciation accounting requires the determination of the mortality characteristics that are applicable to the surviving property. One purpose of the depreciation study reported here was to accurately measure those mortality characteristics and to use those characteristics to determine appropriate rates for the accrual of depreciation expenses.

The major effort of the study was the determination of the appropriate mortality characteristics. The remainder of this report describes how those characteristics were determined, describes how the mortality characteristics were used to calculate the recommended depreciation rates, and presents the results of the rate calculations.

The typical study consists of the following steps:

> Step One is a Life Analysis consisting of the determination of historical experience and an evaluation of the applicability of that experience to surviving property.
>
> Step Two is a Salvage and Cost of Removal Analysis consisting of a study of salvage and cost of removal experience and an evaluation of the applicability of that experience to surviving property.
>
> Step Three consists of the determination of average service lives, retirement dispersion patterns identified by Iowa-type curves and the net salvage factors applicable to the surviving property.
>
> Step Four is the determination of the depreciation rate applicable to each depreciable property group (or amortizable property group) recognizing the results of the work in Steps One through Three, and a comparison with the existing depreciation rates.

LIFE ANALYSIS

The Life Analysis for the property concerns the determination of average service lives ("ASL") and Iowa-type dispersion patterns. An evaluation of investment experience suitably tempered by informed judgment as to the future applicability to surviving property formed the basis for the determination of average service lives, retirement dispersions and net salvage factors.

All Property Groups

An analysis of historical retirement activity, suitably tempered by informed judgment as to the future applicability of such activity to surviving plant, formed the basis for the determination of average service lives and retirement dispersion patterns for all property groups. What this means is that history was not the sole determinant for the study recommendations. An evaluation of that history was made and melded with future expectations. For most accounts, retirement experience from transaction years 1970 through 2006 was analyzed using the Actuarial Method of Life Analysis. This method could be used because aged data are available.

The actuarial method determines actual survivor curves (observed life tables) for selected periods of actual retirement experience. In order to recognize trends in life characteristics and to ensure that the valuable information in the curves is available to the analyst, observed life tables were calculated and plotted by computer, using several different periods of retirement experience. The average service lives and retirement dispersion patterns indicated by the actual survivor curves were identified by visually fitting Iowa-type dispersion curves to the actual curves. Retirement dispersion refers to the pattern of retirements as a function of age over the life of each property group. For each non-Production asset category, an Iowa-type curve combined with an estimated average service life was selected. This selection was based upon an analysis of historical investment activity, associated mortality trends and the types of assets surviving and retiring. The workpapers prepared as an integral part of the depreciation study contain the rationale for each selection.

Trends in historical mortality experience are helpful in understanding history. In order to determine trends, the periods (year bands) of retirement experience analyzed were the past five years, the past ten years, the past fifteen years, the past twenty years and the full band of band of retirement experience. The observed life tables and the Iowa curves fitted to each of these year bands were plotted. This visual approach ensures that the data contained in the observed life tables are available to the analyst and that the analyst does not allow the computer calculations to be the sole determinant of study results.

For accounts having little experience or having retirement experience that is not an adequate measure of the expected mortality characteristics of surviving property, evaluation of the significance of history played a major role in selecting the mortality characteristics shown on Schedules 2 and 3.

SALVAGE AND COST OF REMOVAL ANALYSIS

Salvage and cost of removal experience was analyzed using experience from the period 1992 – 2006. Rolling and shrinking bands were analyzed to help expose trends. An evaluation of salvage and cost of removal experience suitably tempered by informed judgment as to the future applicability to surviving property formed the basis for the determination of salvage and cost of removal factors.

The analysis consisted of calculating salvage and cost of removal factors by relating the recorded salvage and cost of removal for each property group to the retirements that caused the salvage and cost of removal to occur.

EVALUATION OF ACTUAL EXPERIENCE

The typical evaluation consists of Life Analysis and Salvage and Cost of Removal Analysis, which involve the measurement of what has occurred in the past. History is sometimes a misleading indicator of the future. It is the evaluation phase of a depreciation study that identifies if history is a good indicator of the future. Blind acceptance of history often results in selecting mortality characteristics to use for calculating depreciation rates that will provide recovery over a time period longer than productive life.

For each property group, the typical analysis processes involve historical investment experience. Since depreciation rates will be applied to surviving property, the historical mortality experience indicated by a Life Analysis and the Salvage and Cost of Removal

Analysis is evaluated to ensure that the mortality characteristics used to calculate the depreciation rates are applicable to the surviving property. The evaluation is required to ensure the validity of the depreciation rates.

The normal evaluation process requires knowledge of the type of property surviving; the type of property retired; the reasons for changing life, dispersion, salvage and cost of removal; and the effect of present and future Empire plans on the property mortality characteristics.

The Life Analyses of all functional categories showed average life changes in both directions. An example of an increased average service life is Account 365 – Overhead Conductors and Devices. An example of an average service life decrease is for Account 367 – Underground Conductors and Devices.

The Cost of Removal and Salvage Analysis of all functional categories generally showed more cost of removal and less salvage than the existing depreciation rates reflect. An example of increased cost of removal is in Account 362 – Station Equipment.

CALCULATION OF DEPRECIATION RATES

A straight-line remaining life rate for each depreciable property group was calculated using the following formula:

$$\text{Rate} = \frac{\text{Plant Balance} - \text{Net Salvage}}{\text{Average Service Life}}$$

Formula numerator elements in percent of depreciable plant balance and the denominator in years produce a rate in percent. The depreciable balances were taken from accounting records, and the average service lives and net salvage factors were determined by the study.

VINTAGE AMORTIZATION ACCOUNTING

We are recommending the adoption and implementation of Vintage Amortization Accounting. This change is being proposed for three reasons. First, these accounts generally represent items of small dollar unit prices, with similar mortality characteristics. Second, the percentage of total plant represented by these accounts is minimal, only about two and one-quarter percent of total depreciable plant balances. Third, the proposed method of accounting will eliminate the individual recording and tracking by Property Accounting of thousands of items. Since the FERC issued Accounting Release AR-15, which provides blanket approval for vintage amortization accounting when certain conditions are met, a large majority of utility companies have received regulatory approval and adopted this process. This approach is intended to simplify the accounting effort and to accommodate the universal difficulty of dealing with unreported retirements. It is a process of systematic and rational recording of expense and the retirement of small dollar items in certain of the accounts. For vintages with an age in excess of the estimated service lives, the amounts will be retired. Accounts with net unrecovered amounts will be amortized over a period of four years. Empire will amortize the balance in each account over the amortization period. The Company would use a vintage (year of addition) accounting methodology to record assets in these accounts. Under the proposed method of accounting, amounts recorded as additions to utility plant would be recorded in the Continuing Property Records (CPR) of the Company at a vintage account level only (i.e. total by year), as opposed to tracking assets individually. These vintage amounts would then be amortized over their average service life, as determined in this depreciation study. When each vintage amount reaches its average service life (i.e. the amount is fully amortized), the original cost in that vintage amount will be retired from utility plant in service.

The accounts to be amortized, all in the General Plant function, are:

Account 391.1 – Office Furniture and Equipment
Account 391.2 – Computer Equipment
Account 393 – Stores Equipment
Account 394 – Tools, Shop and Garage Equipment
Account 395 – Laboratory Equipment
Account 397 – Communication Equipment
Account 398 – Miscellaneous Equipment

RESULTS

A comparison of the existing depreciation rates to the proposed study depreciation rates can be found on Schedule 1 in this report. A listing, by account, of the proposed and existing mortality characteristics can be found on Schedule 2 and Schedule 3. Schedule 3A shows the lives to be used for those accounts that are to be amortized.

Steam Production Plant

The depreciation rate for this functional category increases from 1.86% to 2.10%. Lives are longer and the recognition of net salvage is an offset to the decrease in annual depreciation caused by longer lives. The existing depreciation rates reflected zero net salvage. The increase in annual depreciation expense is $499,738.

Hydraulic Production Plant

The depreciation rate for this functional category is an increase from 1.62% to 1.67%. Lives are slightly longer and the recognition of net salvage is the primary driver for the increase. The existing depreciation rates reflected zero net salvage. The increase in annual depreciation expense is $1,978.

Other Production Plant

For this functional category, a significant decrease in depreciation rate is indicated, from 2.46% to 2.27%. Longer and more realistic lives are the cause for the decrease. The annual depreciation expense is reduced by $582,768.

Transmission Plant

The depreciation rate for this functional category increased from 2.38% to 3.18%. Shorter lives and more negative net salvage drive the change. Third party reimbursements were identified and related to annual additions. Insurance proceeds were identified and eliminated from the salvage and cost of removal analysis. Insurance proceeds are not a component of depreciation. The increase in annual depreciation expense is $1,333,440.

Distribution Plant

For this asset grouping, an increase in the depreciation is indicated from 3.60% to 3.62%. Longer lives were offset by more negative net salvage. Insurance proceeds were identified and eliminated from the salvage and cost of removal analysis. Insurance proceeds are not a component of depreciation. The increase in annual depreciation is $151,024.

General Plant

There is a decrease in depreciation rate indicated for this asset category from 5.28% to 5.19%. The primary driver is longer lives. The annual depreciation expense decrease is $21,966.

AMORTIZED PLANT

For the amortized assets, vintage year balances with an age greater than the amortization period will be retired and were assumed to be fully accrued. In total, the fully accrued retirements equal $3,443,412. The amortization accrual is $1,714,418 as shown in Column [7] on Schedule 1A. The four-year amortization of the unrecovered balance is $731,122, as shown in Column [8].

RECOMMENDATIONS

Our recommendations for your future action in regard to book depreciation are as follows:

1. The depreciation rates shown in Column 6 of Schedule 1 are applicable to existing property and are recommended for implementation at such time as their effect can be incorporated into service rates.

2. Because of variation of life and net salvage experience with time, a depreciation study should be made during 2010 based upon retirement experience through December 31, 2009, consistent with Commission policy. Exact timing of the study should be coordinated with a general rate case to ensure timely implementation of revised depreciation rates.

3. We recommend that Empire adopt the vintage amortization accounting as described above. This approach has been implemented by numerous utilities all over the country. This approach solves the universal problem of unreported retirements, is intended to simplify the property accounting effort, and provides a better matching of the accounting effort with the magnitude of the asset base.

4. For new asset categories that arise in the future for which no depreciation rate is currently approved, we recommend that the functional composite depreciation rates be used until future depreciation studies are conducted. The functional composite are as follows:

Steam Production Plant	2.10%
Hydraulic Production Plant	1.67%
Other Production Plant	2.27%
Transmission Plant	3.18%
Distribution Plant	3.62%
General Plant	5.19%

APPENDIX A

Bases for Changes to Rates

STEAM PRODUCTION PLANT

For Steam Production Plant, the composite depreciation rate increases from 1.86% to 2.10%. The major change to the mortality characteristics that causes this increase is recognition of net salvage. Average service lives changed in both directions.

Actuarial life analysis was performed consistent with the approach utilized in developing the existing approved depreciation rates. For the total Steam Production Plant function, the composite net salvage is approximately negative 17% related to December 31, 2006, plant balances.

The most significant change in annual depreciation expense is for Account 312, Boiler Plant Equipment. A slightly longer average service life (from 54 years to 55 years) was offset by the inclusion of 20% negative net salvage based upon historical experience.

HYDRAULIC PRODUCTION PLANT

The existing 1.62% composite depreciation rate increases slightly to 1.67%. Empire operates the Ozark Beach facility. The major change to the mortality characteristics that causes this increase is recognition of net salvage. Average service lives changed in both directions.

Actuarial life analysis was performed consistent with the approach utilized in developing the existing approved depreciation rates. No one account had an impact of more than $5,000 on annual depreciation expense. For the total Hydraulic Production Plant function, the composite terminal net salvage is approximately negative 8% related to December 31, 2006, plant balances.

OTHER PRODUCTION PLANT

This functional category composite depreciation rate decreases from 2.46% to 2.27%. The basis for the decrease is the use of longer average service lives. The decrease in annual depreciation expense is somewhat offset by the inclusion of net salvage in the depreciation rate calculation.

Actuarial life analysis was performed consistent with the approach utilized in developing the existing approved depreciation rates. For the total Other Production Plant function, the composite terminal net salvage is approximately negative 1% related to December 31, 2006, plant balances.

TRANSMISSION PLANT

The composite depreciation rate increases from 2.38% to 3.18%. There are two asset categories with changes in annual depreciation amounts in excess of $100,000: Account 355 – Poles and Fixtures and Account 356 – Overhead Conductors and Devices.

Account 352 – Structures and Improvements

The primary component is buildings. An increase in average service is indicated and a change is made from the existing 55 years to 60 years. An R1.5 pattern was selected. Some cost of removal has been incurred and is expected. The selected net salvage ratio is negative 15%.

Account 353 – Station Equipment

No change in average service life is shown in all experience bands analyzed and is reflected in the selected average service life of 50 years. An R3 Iowa curve was selected based upon recent experience. Minimal salvage has been recorded and cost of removal experience has been consistent. Insurance proceeds were eliminated from the salvage and cost of removal analysis. Insurance recoveries are not a component of depreciation. The net salvage recommendation is negative 15%.

Account 354 – Towers and Fixtures

This account consists of a few tower installations. Retirements have been scattered, but the full band experience produces a reasonable indication, resulting in the selection of an R4 curve with an average service life of 75 years. The existing ASL is 65 years. No salvage has been recorded and cost of removal is evident. The existing negative 25% net salvage was retained.

Account 355 – Poles and Fixtures

The historical analysis results indicate the need for a change in both retirement dispersion and average service life. The existing R4 pattern with an ASL of 60 years was changed to an R5 pattern with an ASL of 55 years. Historical cost of removal is trending upward, and is greater than the existing cost of removal ratio. Third party reimbursements were identified and related to additions. This treatment provides the proper salvage credit. The net salvage selection is negative 125%, changed from the existing negative 100%.

Account 356 – Overhead Conductors and Devices

The historical indications support a reduction in average service life from 65 years to 55 years. The curve shape was changed from an R2.5 pattern to and S3 pattern to reflect the historical results. Salvage has been consistent in recent years and cost of removal has increased from the prior study. Third party reimbursements were identified and related to additions. This treatment provides the proper salvage credit. The recommended net salvage ratio is negative 125%, a change from the existing negative 40%.

DISTRIBUTION PLANT

The composite depreciation rate for this function increases from 3.60% to 3.62%. Average service life changes go in both directions, although most are increases, and net salvage is more negative. There are five asset categories with annual depreciation expense changes in excess of $250,000: Account 362 – Station Equipment, Account 364 – Poles, Towers and Fixtures, Account 366 – Underground Conduit, Account 368 – Line Transformers and Account 371 – Installations on Customers' Premises.

Account 361 – Structures and Improvements

The majority component is structures. Based upon the mix of assets, an average service life of 60 years was selected with an R2.5 pattern. The existing parameters are an R4 – 60. No salvage has been recorded, but some cost of removal has been incurred. The selection is negative 50%, a change from the existing negative 25% allowance.

Account 362 – Station Equipment

The analysis indications for this asset category reveal no change to the existing average service life. Our recommendation is continued used of 45 years, with an R2.5 pattern. Salvage has declined to zero, and cost of removal has declined from the prior study as well. Our net salvage selection is negative 50%, a change from the existing positive 15%. Insurance proceeds were identified and eliminated from the salvage and cost of removal analysis.

Account 364 – Poles, Towers and Fixtures

ASL indications are for a longer life. Our selection is an R5 pattern with an ASL of 48 years, an increase from the existing 46-year ASL with an L5 pattern. Some salvage continues to be recorded. Third party payments were identified and related to replacement additions. Cost of removal varies across individual years, but has generally increased. Third party reimbursements were identified and related to additions. This treatment provides the proper salvage credit. We recommend a net salvage ratio of negative 125%, a change from the existing negative 100%.

Account 365 – Overhead Conductors and Devices

An increase in ASL is shown across all bands analyzed. A different retirement dispersion pattern is also indicated. Our selection is an S2 pattern with an ASL of 58 years. The existing parameters are an R3 pattern with a 53-year ASL. Salvage continues to decline, although some salvage allowance is indicated. Third party payments were identified and related to replacement additions. Cost of removal is increasing and we recommend a movement toward recent experience. The selection for this account is negative 125% net salvage, a change from the existing negative 100%.

Account 366 – Underground Conduit

An increase in average service life is indicated. Our selection reflects the increasing ASL trend and is an R3 pattern with an ASL of 45 years, a change from the existing R3 – 37. Cost of removal and salvage essentially offset. Our selection is 0% net salvage, a change from the existing negative 45%.

Account 367 – Underground Conductors and Devices

This account has experienced considerable growth. Consistent results indicate the need for a decreased ASL. We have selected an R2.5 pattern with an ASL of 30 years, reflective of the analysis results. This is a decrease from the existing 32-year ASL with an S1 pattern. Cost of removal has remained constant, and salvage has increased. Our selection is based upon the full experience band. We recommend negative 5% net salvage, a change from the existing negative 15%.

Account 368 – Line Transformers

There are fairly consistent indications from the life analysis, supporting a modest increase in ASL from the existing 45 years. We have selected an S1 pattern with an ASL of 50 years. Salvage is essentially 25%o, but cost of removal increases across all bands. This trend reflects the increased disposal costs associated with these assets. Our selection is 0%, a change from the existing negative 25%.

Account 369 – Services

An ASL increase is indicated. Our selection is an R5 pattern with an ASL of 45 years, compared with the existing S4 – 40. Some salvage continues to be recorded, but cost of removal has increased. We have selected negative 125% net salvage, a change from the existing negative 100%.

Account 370 – Meters

Very consistent results were obtained, exhibiting support for the existing life and curve. We have retained an S0 pattern with a 44-year ASL. Some cost of removal has been recorded, and our selection is a negative 3% net salvage ratio, compared to the existing 0%.

Account 371 – Installations on Customers' Premises

A modest increase in ASL is evident. Our selection is an S1 pattern with an ASL of 28 years, contrasted with the existing L1.5 – 25. Cost of removal has declined, and we have selected negative 10% net salvage, a change from the existing negative 45%.

Account 373 – Street Lighting and Signal Systems

There is no change in curve shape or ASL for this asset category. We have used an R2 pattern with an ASL of 48 years. Cost of removal is less, and is reflected in our negative 15% net salvage ratio, compared to the existing negative 50%.

GENERAL PLANT

The composite depreciation rate decreases from 5.28% to 5.19%. No asset category has a change in annual depreciation amounts greater than $100,000.

Account 390 – Structures and Improvements

The majority of asset relate to civil structures. The historical indications are for no change to the existing average service life of 40 years. We have selected an S2 pattern. The existing pattern is R1.5. Cost of removal has declined. Our recommendation is for use of negative 5% net salvage, compared to the existing negative 10%.

Account 392 – Transportation Equipment

For this Account, slightly longer lives are expected, based upon the mix of vehicles, and the average service life was increased from twelve years to thirteen years. Less salvage has been received and net salvage was changed from positive 15% to positive 10%.

Account 396 – Power Operated Equipment

The existing average service life of fifteen years was retained. Some salvage has been received, and net salvage was unchanged at positive 5%.

PLANT TO BE AMORTIZED

The composite rate for accounts and assets to be amortized is 6.90%, compared with existing composite rate of 6.71%. The most significant change can be seen in Account 397 – Communication Equipment, where the amortization rate increases from 4.00% to 5.00%.

The selected amortization period reflects the type of assets, current trends and the Company's own experience and expectations. The amortization period selected ranges from 10 years to 42 years.

Schedule DSR-3

THE EMPIRE DISTRICT ELECTRIC COMPANY

COMPARISON OF DEPRECIATION RATES AND ANNUAL AMOUNTS

TABLE 1

[1] Account Number	[2] Description	[3] 12/31/2006 Balance $	[4] Existing Rate %	[5] Annual Amount $	[6] WL Rate %	[7] Annual Amount $	[8] Increase or (Decrease) $
STEAM PRODUCTION PLANT							
311.0	Structures & Improvements	23,811,430	1.06	251,353	1.60	380,983	129,630
312.0	Boiler Plant Equipment	128,877,453	1.88	2,428,748	2.18	2,809,528	380,780
312.1	Coal Cars	5,580,296	6.67	372,206	5.00	279,015	(93,191)
314.0	Turbogenerator Units	36,776,791	1.61	593,822	1.83	673,015	79,193
315.0	Accessory Electric Equipment	7,330,476	1.49	109,207	1.75	128,283	19,076
316.0	Misc. Power Plant Equipment	3,909,460	1.95	76,348	1.55	60,597	(15,751)
	Total Steam Production Plant	206,285,906	1.86	3,831,684	2.10	4,331,421	499,738
HYDRAULIC PRODUCTION PLANT							
331.0	Structures & Improvements	556,389	1.64	9,125	1.25	6,955	(2,170)
332.0	Reservoirs, Dams & Waterways	1,450,298	1.67	24,220	2.00	29,006	4,786
333.0	Waterwheels, Turbines & Generators	1,611,159	1.47	23,684	1.39	22,395	(1,289)
334.0	Accessory Electric Equipment	812,324	1.47	11,941	1.83	14,866	2,924
335.0	Misc. Power Plant Equipment	366,646	2.44	8,946	1.82	6,673	(2,273)
	Total Hydraulic Production Plant	4,796,816	1.62	77,916	1.67	79,894	1,978
OTHER PRODUCTION PLANT							
341.0	Structures & Improvements	14,593,800	2.31	336,689	1.82	265,607	(71,082)
342.0	Fuel Holders, Producers & Accessories	13,779,806	2.87	394,824	3.75	516,743	121,919
343.0	Prime Movers	159,329,953	2.42	3,863,033	2.27	3,616,790	(246,243)
344.0	Generators	81,375,321	2.12	1,725,090	2.27	1,847,220	122,130
345.0	Accessory Electric Equipment	14,394,151	3.19	458,614	1.67	240,382	(218,232)
346.0	Misc. Power Plant Equipment	14,351,732	3.85	552,461	1.82	261,202	(291,259)
	Total Other Production Plant	297,824,763	2.46	7,330,711	2.27	6,747,943	(582,768)
	Total Production Plant	508,907,485	2.21	11,240,311	2.19	11,159,259	(81,052)
TRANSMISSION PLANT							
352.0	Structures & Improvements	2,357,554	2.09	49,273	1.92	45,265	(4,008)
353.0	Station Equipment	82,068,329	2.20	1,805,503	2.30	1,887,572	82,068
354.0	Towers & Fixtures	799,508	1.92	15,351	1.67	13,352	(1,999)
355.0	Poles & Fixtures	29,992,731	3.33	998,758	4.09	1,226,703	227,945
356.0	Overhead Conductors & Devices	53,063,576	2.15	1,140,867	4.09	2,170,300	1,029,433
	Total Transmission Plant	168,281,698	2.38	4,009,751	3.18	5,343,191	1,333,440
DISTRIBUTION PLANT							
361.0	Structures & Improvements	9,117,131	2.08	189,636	2.50	227,928	38,292
362.0	Station Equipment	63,879,547	1.89	1,207,323	3.33	2,127,189	919,865
364.0	Poles, Towers & Fixtures	106,735,812	4.35	4,643,008	4.69	5,005,910	362,902
365.0	Overhead Conductors & Devices	115,440,681	3.77	4,352,114	3.88	4,479,098	126,985
366.0	Underground Conduit	19,414,728	3.92	761,057	2.22	431,007	(330,050)
367.0	Underground Conductors & Devices	45,457,445	3.59	1,631,922	3.50	1,591,011	(40,912)
368.0	Line Transformers	76,635,996	2.78	2,130,481	2.00	1,532,720	(597,761)
369.0	Services	54,565,246	5.00	2,728,262	5.00	2,728,262	-
370.0	Meters	17,136,148	2.27	388,991	2.34	400,986	11,995
371.0	Installations on Customers' Premises	13,667,365	5.80	792,707	3.93	537,127	(255,580)
373.0	Street Lighting & Signal Systems	11,604,497	3.13	363,221	2.40	278,508	(84,713)
	Total Distribution Plant	533,654,596	3.60	19,188,722	3.62	19,339,746	151,024
GENERAL PLANT							
390.0	Structures & Improvements	9,212,785	2.75	253,352	2.63	242,296	(11,055)
392.0	Transportation Equipment	6,819,102	7.08	482,792	6.92	471,882	(10,911)
396.0	Power Operated Equipment	10,392,093	6.33	657,819	6.33	657,819	-
	Total General Plant	26,423,980	5.28	1,393,963	5.19	1,371,998	(21,966)
	Total Depreciable Electric Plant	1,237,267,759	2.90	35,832,748	3.01	37,214,194	1,381,446
	Amortized General Plant	24,835,433	6.71	1,666,780	9.85	2,445,540	778,760
	Fully Accrued Retirements	3,443,412	6.71	231,098	-	-	(231,098)
	Total Electric Plant	1,265,546,604	2.98	37,730,626	3.13	39,659,734	1,929,108

Schedule DSR-3

THE EMPIRE DISTRICT ELECTRIC COMPANY

TABLE 1A

Comparison of Depreciation Rates and Amounts
Amortized Accounts

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
				EXISTING	AMORTIZATION		Unrecovered	Total	
Account Number	Description	12/31/2006 Balance	Rate	Annual Amount	Rate	Annual Amount	Amortized Amount	Amortization Amount	Increase or (Decrease)
		$	%	$	%	$	$	$	$
	GENERAL PLANT								
391.10	Office Furniture & Equipment	3,041,719	5.00	152,086	4.00	121,669	57,231	178,900	26,814
391.20	Computer Equipment	10,715,630	10.00	1,071,563	10.00	1,071,563	294,949	1,366,512	294,949
393.00	Stores Equipment	333,503	3.17	10,572	3.13	10,439	(16,765)	(6,326)	(16,898)
394.00	Tools, Shop & Garage Equipment	2,797,946	4.50	125,908	5.00	139,897	16,570	156,467	30,559
395.00	Laboratory Equipment	917,132	2.63	24,121	2.38	21,828	(51,023)	(29,195)	(53,316)
397.00	Communication Equipment	6,784,189	4.00	271,368	5.00	339,209	429,635	768,844	497,476
398.00	Miscellaneous Equipment	245,314	4.55	11,162	4.00	9,813	525	10,338	(824)
	Subtotals	24,835,433	6.71	1,666,780	6.90	1,714,418	731,122	2,445,540	778,760
	Total Amortized Retirements	3,443,412	6.71	231,098					(231,098)
	TOTALS, w/Retmts	28,278,845		1,897,878		1,714,418	731,122	2,445,540	547,662

NOTE: Column [8] reflects the annual amount for a four-year recovery of Net Unrecovered Amortization Amounts.

Schedule DSR-3

THE EMPIRE DISTRICT ELECTRIC COMPANY — **TABLE 1C**

DEVELOPMENT OF EXISTING COMPOSITE RATES

[1] Account Number	[2] Description	[3] 12/31/2006 Balance $	[4] Existing Rate %	[5] Annual Amount $
STEAM PRODUCTION PLANT				
311.0	Structures & Improvements			
	Riverton	10,477,673	1.05	110,016
	Asbury	9,296,274	1.06	98,541
	Iatan	4,037,483	1.06	42,797
	Total Account 311	23,811,430	1.06	251,353
312.0	Boiler Plant Equipment			
	Riverton	23,454,175	1.86	436,248
	Asbury	73,384,162	1.89	1,386,961
	Iatan	32,039,116	1.89	605,539
	Total Account 312	128,877,453	1.88	2,428,748
312.1	Coal Cars	5,580,296	6.67	372,206
314.0	Turbogenerator Units			
	Riverton	6,540,511	1.59	103,994
	Asbury	21,664,510	1.62	350,965
	Iatan	8,571,770	1.62	138,863
	Total Account 314	36,776,791	1.61	593,822
315.0	Accessory Electric Equipment			
	Riverton	1,263,400	-	-
	Asbury	2,372,605	1.80	42,707
	Iatan	3,694,471	1.80	66,500
	Total Account 315	7,330,476	1.49	109,207
316.0	Misc. Power Plant Equipment			
	Riverton	1,132,372	1.96	22,194
	Asbury	1,823,300	1.95	35,554
	Iatan	953,788	1.95	18,599
	Total Account 316	3,909,460	1.95	76,348
	Total Steam Production Plant	206,285,906	1.86	3,831,684
HYDRAULIC PRODUCTION PLANT				
331.0	Structures & Improvements	556,389	1.64	9,125
332.0	Reservoirs, Dams & Waterways	1,450,298	1.67	24,220
333.0	Waterwheels, Turbines & Generators	1,611,159	1.47	23,684
334.0	Accessory Electric Equipment	812,324	1.47	11,941
335.0	Misc. Power Plant Equipment	366,646	2.44	8,946
	Total Hydraulic Production Plant	4,796,816	1.62	77,916
OTHER PRODUCTION PLANT				
341.0	Structures & Improvements			
	Energy Center	1,933,737	1.82	35,194
	Aero	1,116,141	1.82	20,314
	Riverton	575,567	1.82	10,475
	State Line	4,133,564	1.82	75,231
	State Line CC	6,834,791	2.86	195,475
	Total Account 341	14,593,800	2.31	336,689
342.0	Fuel Holders, Producers & Accessories			
	Energy Center	1,303,036	-	-
	Aero	12,971	-	-
	Riverton	468,175	3.85	18,025
	State Line	3,406,556	3.85	131,152
	State Line CC	8,589,068	2.86	245,647
	Total Account 342	13,779,806	2.87	394,824
343.0	Prime Movers			
	Energy Center	25,549,232	1.92	490,545
	Riverton	8,313,417	1.92	159,618
	State Line	40,375,822	1.93	779,253
	State Line CC	85,091,482	2.86	2,433,616
	Total Account 343	159,329,953	2.42	3,863,033
344.0	Generators			
	Energy Center	4,516,458	1.82	82,200
	Aero	40,181,059	1.82	731,295
	Riverton	1,942,325	1.82	35,350
	State Line	11,268,284	1.82	205,083
	State Line CC	23,467,195	2.86	671,162
	Total Account 344	81,375,321	2.12	1,725,090
345.0	Accessory Electric Equipment			
	Energy Center	339,416	3.57	12,117
	Aero	2,275,706	3.57	81,243
	Riverton	286,239	3.57	10,219
	State Line	3,710,093	3.57	132,450
	State Line CC	7,782,697	2.86	222,585
	Total Account 345	14,394,151	3.19	458,614
346.0	Misc. Power Plant Equipment			
	Energy Center	1,317,225	4.00	52,689
	Aero	12,323,745	4.00	492,950
	Riverton	85,325	4.00	3,413
	State Line	505,815	-	-
	State Line CC	119,622	2.85	3,409
	Total Account 346	14,351,732	3.85	552,461
	Total Other Production Plant	297,824,763	2.46	7,330,711

Schedule DSR-3

THE EMPIRE DISTRICT ELECTRIC COMPANY
Depreciation Study as of December 31, 2006
Comparison of Mortality Characteristics

TABLE 2

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		EXISTING			STUDY						
Account Number	Description	ASL yrs.	Iowa Curve	Net Salvage %	ASL yrs.	Iowa Curve	Salvage %	Salvage Rate %	COR %	COR Rate %	Net Salvage %
	STEAM PRODUCTION PLANT										
311.0	Structures and Improvements	95.0	-	0	75.0	R2	-	-	20.0	0.27	(20.0)
312.0	Boiler Plant Equipment	54.0	-	0	55.0	S0.5	5.0	(0.09)	25.0	0.45	(20.0)
312.1	Coal Cars	15.0	-	0	20.0	SQ	-	-	-	-	-
314.0	Turbogenerator Units	63.0	-	0	60.0	R3	-	-	10.0	0.17	(10.0)
315.0	Accessory Electric Equipment	56.0	-	0	60.0	R4	-	-	5.0	0.08	(5.0)
316.0	Miscellaneous Power Plant Equipment	51.0	-	0	55.0	R2.5	15.0	(0.27)	-	-	15.0
	HYDRAULIC PRODUCTION PLANT										
	OZARK BEACH										
331.0	Structures and Improvements	61.0	-	0	80.0	S0.5	-	-	-	-	-
332.0	Reservoirs, Dams and Waterways	60.0	-	0	60.0	R2.5	-	-	20.0	0.33	(20.0)
333.0	Waterwheels, Turbines and Generators	68.0	-	0	72.0	R3	-	-	-	-	-
334.0	Accessory Electric Equipment	70.0	-	0	60.0	R4	-	-	10.0	0.17	(10.0)
335.0	Miscellaneous Power Plant Equipment	41.0	-	0	55.0	R2.5	-	-	-	-	-
	OTHER PRODUCTION PLANT										
	ALL Except State Line CC										
341.0	Structures and Improvements	55.0	-	0	55.0	R5	-	-	-	-	-
342.0	Fuel Holders, Producers and Access.	26.0	-	0	32.0	R5	-	-	20.0	0.63	(20.0)
343.0	Prime Movers	52.0	-	0	44.0	R0.5	-	-	-	-	-
344.0	Generators	55.0	-	0	44.0	R0.5	-	-	-	-	-
345.0	Accessory Electric Equipment	28.0	-	0	60.0	R4	-	-	-	-	-
346.0	Miscellaneous Power Plant Equipment	25.0	-	0	55.0	R2.5	-	-	-	-	-
	STATE LINE CC										
341.0	Structures and Improvements	35.0	-	0	55.0	R5	-	-	-	-	-
342.0	Fuel Holders, Producers and Access.	35.0	-	0	32.0	R5	-	-	20.0	0.63	(20.0)
343.0	Prime Movers	35.0	-	0	44.0	R0.5	-	-	-	-	-
344.0	Generators	35.0	-	0	44.0	R0.5	-	-	-	-	-
345.0	Accessory Electric Equipment	35.0	-	0	60.0	R4	-	-	-	-	-
346.0	Miscellaneous Power Plant Equipment	35.0	-	0	55.0	R2.5	-	-	-	-	-

Schedule DSR-3

THE EMPIRE DISTRICT ELECTRIC COMPANY
Depreciation Study as of December 31, 2006
Comparison of Mortality Characteristics

TABLE 3

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
		EXISTING			STUDY						
Account Number	Description	ASL	Iowa Curve	Net Salvage	ASL	Iowa Curve	Salvage	Salvage Rate	Cost of Removal	COR Rate	Net Salvage
		yrs.		%	yrs.		%	%	%	%	%
	TRANSMISSION PLANT										
352.0	Structures and Improvements	55.0	R1.5	(15)	60.0	R1.5	-	-	15.0	0.25	(15.0)
353.0	Station Equipment	50.0	R3	(10)	50.0	R3	-	-	15.0	0.30	(15.0)
354.0	Towers and Fixtures	65.0	R5	(25)	75.0	R4	-	-	25.0	0.33	(25.0)
355.0	Poles and Fixtures	60.0	R4	(100)	55.0	R5	20.0	(0.36)	145.0	2.64	(125.0)
356.0	Overhead Conductors and Devices	65.0	R2.5	(40)	55.0	S3	30.0	(0.55)	155.0	2.82	(125.0)
	DISTRIBUTION PLANT										
361.0	Structures and Improvements	60.0	R4	(25)	60.0	R2.5	-	-	50.0	0.83	(50.0)
362.0	Station Equipment	45.0	R2.5	15	45.0	R2.5	-	-	50.0	1.11	(50.0)
364.0	Poles, Towers and Fixtures	46.0	L5	(100)	48.0	R5	20.0	(0.42)	145.0	3.02	(125.0)
365.0	Overhead Conductors and Devices	53.0	R3	(100)	58.0	S2	40.0	(0.69)	165.0	2.84	(125.0)
366.0	Underground Conduit	37.0	R3	(45)	45.0	R3	40.0	(0.89)	40.0	0.89	-
367.0	Underground Conductors and Devices	32.0	S1	(15)	30.0	R2.5	10.0	(0.33)	15.0	0.50	(5.0)
368.0	Line Transformers	45.0	S1	(25)	50.0	S1	5.0	(0.10)	5.0	0.10	-
369.0	Services	40.0	S4	(100)	45.0	R5	25.0	(0.56)	150.0	3.33	(125.0)
370.0	Meters	44.0	S0	0	44.0	S0	-	-	3.0	0.07	(3.0)
371.0	I.O.C.P.	25.0	L1.5	(45)	28.0	S1	20.0	(0.71)	30.0	1.07	(10.0)
373.0	Street Lighting and Signal Systems	48.0	R2	(50)	48.0	R2	20.0	(0.42)	35.0	0.73	(15.0)
	GENERAL PLANT										
390.0	Structures and Improvements	40.0	R1.5	(10)	40.0	S2	-	-	5.0	0.13	(5.0)
392.0	Transportation Equipment	12.0	L3	15	13.0	L2	10.0	(0.77)	-	-	10.0
396.0	Power Operated Equipment	15.0	S1.5	5	15.0	R4	5.0	(0.33)	-	-	5.0

TABLE 3A

THE EMPIRE DISTRICT ELECTRIC COMPANY
Amortization Lives

[1] Account Number	[2] Description	[3] Amortization Life yrs.
	GENERAL PLANT	
391.1	Office Furniture & Equipment	25.0
391.2	Computer Equipment	10.0
393.0	Stores Equipment	32.0
394.0	Tools, Shop & Garage Equipment	20.0
395.0	Laboratory Equipment	42.0
397.0	Communication Equipment	20.0
398.0	Miscellaneous Equipment	25.0

AFFIDAVIT OF DONALD S. ROFF

STATE OF TEXAS)
) ss
COUNTY OF DALLAS)

On the 27TH day of September, 2007, before me appeared Donald S. Roff, to me personally known, who, being by me first duly sworn, states that he is President of Depreciation Specialty Resources and acknowledged that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Donald S. Roff
Donald S. Roff

Subscribed and sworn to before me this 27TH day of September, 2007

Ethel Z. Taylor
Notary Public

My commission expires: August 13, 2010

NOTARY PUBLIC STATE OF TEXAS
ETHEL Z TAYLOR
My Commission Expires
August 13, 2010