Exhibit No.
Issue: Depreciation
Witness: Donald S. Roff
Type of Exhibit: Direct Testimony
Sponsoring Party: Empire District
Case No.

Before the Public Service Commission
of the State of Missouri

Direct Testimony

of

Donald S. Roff

April 2004

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 a Director with the public accounting firm of Deloitte & Touche LLP ("Deloitte"). My business address is JP Morgan Chase Tower, 2200 Ross Avenue, Suite 1600, Dallas, Texas 75201-6778.

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.

1. PURPOSE

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 to The Missouri Public Service Commission ("Commission") the results of a depreciation study that I conducted as of December 31, 2003. 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 depreciation study was conducted to fulfill the requirements of generally accepted accounting principles, as well as following the depreciation definitions of the Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts ("USOA"). 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. Schedule DSR-4 presents a comparison of depreciation rates of other utilities and will be addressed later in my testimony.

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

A. Yes.

2. SUMMARY OF RESULTS

Q. WHAT ARE THE RESULTS OF YOUR DEPRECIATION STUDY?

A. As shown on Schedule 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	1.85	6.18
Hydraulic Production	1.62	3.27
Other Production	2.47	3.62
Transmission Plant	1.88	2.44
Distribution Plant	2.60	5.65
General Plant	6.90	4.48
Total Electric Plant	2.53	4.72

As shown on Schedule 1 of Schedule DSR-3, application of my recommended depreciation rates to the December 31, 2003, depreciable balances results in an increase in annual depreciation expense of about $25.6 million.

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

A. There are three primary elements which account for the substantial increase in annual depreciation expense indicated by my study. The first element, and most significant, is the effect on annual depreciation expense of the relatively low existing depreciation rates. The second element is the retirement dates used to calculate the depreciation rates for Production Plant coupled with new investment. The third element is the effect of negative net salvage. Each of these elements will be addressed separately in later sections of my testimony.

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 1.85% to the recommended depreciation rate of 6.18%. The increase is primarily due to the use of retirement dates consistent with current Company plans, the effect of net salvage, and the effect of book reserve position. For Hydraulic Production Plant, the composite depreciation rate increased from 1.62% to 3.27%. For Other Production Plant, there is an increase in the depreciation rate from the existing rate of 2.47% to the recommended depreciation rate of 3.62%.

This is due primarily to estimated life spans and reserve position. The net dollar impact of the change in depreciation rate is an increase in annual depreciation expense of approximately $12.0 million.

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

A. For the Transmission Plant function, the depreciation rate increases from 1.88% to 2.44%. The composite average service life increases from 55.2 years to 56.5 years. Net salvage decreases from 0% to negative 37% and is the primary reason for the depreciation expense increase. The net dollar impact of the change in depreciation rate is an increase in annual depreciation expense of approximately $904 thousand.

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

A. For the Distribution Plant function, the depreciation rate increases from 2.60% to 5.65%. The composite average service life increases from 39.9 years to 45.1 years. Net salvage decreases from 0% to negative 118%. A portion of the rate increase is attributable to the reserve position. The net dollar impact of the change in rate is an increase in annual depreciation expense of approximately $13.9 million.

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

A. For the General Plant function, the depreciation rate decreases from 6.90% to 4.48%. The composite average service life increases from 18.2 years to 21.7 years. Net salvage changes from 0% to 4%. A portion of the rate decrease is attributable to the reserve position. The net dollar impact of the change in rate is a decrease in annual depreciation expense of approximately $1.2 million.

3. DEPRECIATION RATE COMPARISONS

Q. HAVE YOU MADE ANY COMPARISONS OF DEPRECIATION RATES WITH OTHER COMPANIES WHICH SUPPORT YOUR RESULTS?

A. Yes. While it is not my general practice to make comparisons with other companies due to the variety of factors which affect mortality characteristics and related depreciation rates, I have made a comparison of depreciation rates to demonstrate how low the existing composite depreciation rate of Empire appears to be.

Q. WHAT TYPES OF FACTORS AFFECT MORTALITY CHARACTERISTICS AND DEPRECIATION RATES?

A. These factors include, but are not limited to, capitalization policy, growth, location, construction standards, retirement reporting, pricing conventions, market circumstances, regulatory actions, field conditions, cause of retirement and accounting practices.

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 or interim activity ratios, and net salvage allowance. Interim activity ratios encompass interim retirement ratios and interim addition ratios. Net salvage is the difference between salvage and cost of removal. If cost of removal exceeds salvage, negative net salvage occurs.

Q. WHAT DOES YOUR COMPARISON REVEAL?

A. I have included Schedule DSR-4 to illustrate the range of depreciation rates used by other Companies. My selection of Companies was based upon those utilities generally surrounding Joplin and Missouri, as well as utilities of reasonably the same size. This Schedule shows that only two Companies out of the sample of twenty-six (26) had a composite depreciation rate within 25 basis points of Empire's existing computed composite depreciation rate of 2.53%. I have conducted no extensive evaluation of the factors influencing any particular company composite depreciation rate. The two conclusions that I can reasonably reach are: 1.) a composite depreciation rate of at least 3.00% seems to be an adequate average composite depreciation rate for an electric utility and 2.) Empire's existing composite depreciation rate(s) is dramatically below this aggregate average. I will point out that my recommended composite depreciation rate is dramatically above this "minimum" rate.

4. DEPRECIATION CONCEPTS

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.

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

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

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 FERC USOA provides a series of definitions related to depreciation as shown on page 3 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 Commission has adopted the FERC USOA.[2]

Q. WHY IS THIS CITING SIGNIFICANT?

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

[2] 4 CSR 240-20.030.

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 over time.

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

A. Yes. The following quotation directly addresses 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 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.

[3] 18 CFR Part 101.

> 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 over the life of the property devoted to their service. By properly including net salvage, the potential for intergenerational cross subsidy is eliminated. As a matter of sound public policy, there is no reason to impose the costs of net salvage on future electric customers. This produces an economically inefficient allocation of resources across time to the detriment of all customers. 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, Paragraph 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

5. NET SALVAGE CONCEPTS

Q. WHAT IS NET SALVAGE?

A. Net salvage is the difference between salvage and cost of removal. If cost of removal exceeds salvage, negative net salvage occurs.

Q. WHY IS NET SALVAGE SIGNIFICANT TO THIS PROCEEDING?

A. Net salvage is significant to this proceeding because, in my view, it has been improperly recognized in the past. Thus the existing depreciation rates are understated because of how net salvage has been treated by this Commission in prior proceedings.

Q. YOU HAVE INDICATED THAT YOU BELIEVE THE APPROACH TAKEN BY THIS COMMISSION HAS BEEN INCORRECT WITH HOW IT HAS RECOGNIZED NET SALVAGE FOR EMPIRE IN THE PAST. CAN YOU ELABORATE ON THIS VIEW?

A. Yes. We first must start with an understanding of regulatory accounting principles and the regulatory rules that must be followed by Empire with respect to depreciation. Empire is required to follow the USOA of the FERC. Empire is required to practice accrual accounting. Under the USOA, Empire is required, upon retirement of an asset to credit plant in service and debit accumulated depreciation. If salvage is received, Empire is required to credit accumulated depreciation. If cost of removal is incurred, Empire is required to debit accumulated depreciation. The clear intent of these requirements is to recognize

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Electric Plant in Service (Account 110, Accumulated Provision for Depreciation and Amortization of Electric Utility Plant, in the case of Nonmajor utilities).

net salvage (salvage less cost of removal) in annual depreciation expense. Depreciation, within the USOA, is defined as loss in service value, and service value is defined as the difference between original cost and net salvage value. Thus net salvage is supposed to be included as a component of depreciation. Second, the recent requirement for Empire by this Commission to treat net salvage on a cash basis is absolutely in violation of its own rules and requirements, first with respect to being inconsistent with accrual accounting and second with respect to not including a net salvage component with the depreciation rate. Third, such a treatment effectively defers the recovery of such costs from the generation of customers that benefited from the use of the retired assets to the last generation of customers that happen to being utilizing the asset at the time of its retirement. Deferral is improper and unfair. Common sense would reveal that any deferral is improper, and the unfairness rests with charging the wrong generation of customers. Staff's recommendation to recognize net salvage costs only on a cash basis is simply a cross subsidy of current customers who benefit from these assets at the expense of future customers who will need to pay these costs for retiring plant at a point in time when the plant is no longer used and useful. Fourth, Empire is continually retiring and removing plant. As such, the proper accrual for net salvage should be over the life of the asset, not at the end of the life of the asset. The effect of accrual accounting is to allocate a portion of the asset's total cost to each accounting period. As discussed above, the total cost includes net salvage in the depreciation base. The effect of cash accounting is not such an equitable cost allocation. Rather, Staff's methodology

will lead to more volatile depreciation rates as salvage/removal related cash flows will spike whenever a major plant or asset is retired. Fifth, the use of a cash basis for net salvage is a practice of exception, whereas accrual accounting has widespread usage and authorization. I know of only three jurisdictions that have accepted a cash basis approach for net salvage compared with over 45 jurisdictions that utilize accrual accounting.

Q. HOW DOES YOUR DEPRECIATION STUDY RECOGNIZE ASSET CONSUMPTION?

A. Asset consumption in my depreciation study is recognized in two different ways, depending upon the type of asset. For mass property (Transmission, Distribution and General Plant), asset consumption (retirement dispersion) is defined by the use of Iowa type curves and related average service lives. For life span property (power plants), asset consumption is recognized through the use of interim addition and interim retirement ratios, which provide a form of retirement dispersion, by estimated capital replacement amounts over the life of the facility.

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.

6. DEPRECIATION STUDY CONCEPTS

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 were conducted by Deloitte personnel. 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 Deloitte 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 Deloitte personnel.

7. PRODUCTION PLANT LIFE ANALYSIS

Q. PLEASE DISCUSS THE LIFE ANALYSIS PROCESS UTILIZED FOR PRODUCTION PLANT.

A. There were two separate life analyses performed for Production Plant – the first was based upon historical accounting activity, performed by Deloitte personnel, and the second was a forecast of projected investment activity, also performed by Deloitte personnel under my direction and supervision.

Q. PLEASE DESCRIBE THE HISTORICAL ANALYSIS PERFORMED FOR PRODUCTION PLANT.

A. The historical analysis performed for Production Plant consisted of the development of a worksheet of additions, retirements and plant balances for each plant site (e.g., Riverton) and primary account (e.g., Account 312 – Boiler Plant Equipment). Original additions were identified separate from interim additions and interim retirements were identified separate from terminal retirements.

Q. WHAT ARE ORIGINAL ADDITIONS, INTERIM ADDITIONS, INTERIM RETIREMENTS AND TERMINAL RETIREMENTS?

A. Original additions refer to the initial construction cost of a plant or unit. Interim additions refer to replacements of initial equipment or the addition of new equipment. Interim retirements refer to retirements of components throughout the life of a plant or unit. Terminal retirements refer to the final retirement of a plant or unit.

Q. WHY IS THIS DISTINCTION IMPORTANT?

A. One purpose of this analysis is to determine interim activity ratios (both interim addition and interim retirement ratios) for use in the second life analysis (i.e., forecast of projected investment activity) mentioned above. An interim retirement ratio was determined by dividing the sum of interim retirements by the sum of beginning plant or unit balances for each account. When expressed as a depreciation rate, this interim retirement ratio is the depreciation rate that would accrue the level of cost related to interim retirements over the life of the facility. An interim addition ratio was also determined by dividing the sum of the interim additions by the sum of the interim retirements. Thus this ratio is the number of dollars of new capital for each dollar of interim retirement. These ratios are important because they provide a measure of capital cost that must be included in the depreciable base of each asset category in order to develop an appropriate depreciation rate. Thus there is a relationship between the life used for depreciation purposes and the investment necessary to achieve that life.

Q. FOR PRODUCTION PLANT, WHAT LIFE ARE YOU REFERRING TO?

A. Utility companies Production Plant facilities are unique in that all assets tend to retire at one point in time, in this case the estimated retirement date. Company engineers provided an estimated retirement date for each Production unit. This retirement date effectively defines the period over

which depreciation is to be accomplished. These estimated retirement dates assume normal maintenance and routine capital replacements, but do not include major investments that may be required for environmental regulations.

Q. HOW WERE THE RETIREMENT DATES AND INTERIM ACTIVITY RATIOS UTILIZED IN YOUR DEPRECIATION STUDY?

A. For each primary account, a forecast worksheet was prepared showing the existing investment and accumulated depreciation, and a projection of interim retirements, as well as the terminal retirement amount. These amounts were utilized in the development of a depreciation rate that provides for full recovery of these surviving and retiring amounts over the life of the facility. Interim and terminal net salvage amounts were also incorporated and will be discussed later in my testimony.

Q. WHY SHOULD INTERIM ADDITIONS AND RETIREMENTS BE INCLUDED IN THE CALCULATION OF DEPRECIATION RATES FOR PRODUCTION PLANT?

A. Interim retirements occur over the life of a production unit as capital items are replaced or retired. This is clearly evident from a review of historical retirement experience. Recognition of the effect of these interim retirements in the depreciation rate calculation is necessary to ensure that

these interim retirements are fully depreciated by the time they occur. Similarly, interim additions occur over the life of a production unit as items are replaced or new items are installed. This activity is also clearly evident from a review of historical investment experience. While I believe that recognition of the effect of these interim additions in the depreciation rate calculation is highly preferable, such inclusion would create an even greater increase in annual depreciation expense. Therefore, in an effort to limit the annual depreciation expense change in this proceeding, I have not included interim additions in the depreciation rate calculation.

Q. WHAT INTERIM ACTIVITY RATIOS WERE DEVELOPED IN YOUR DEPRECIATION STUDY?

A. The interim addition ratios and interim retirement ratios developed in my depreciation study are shown in Columns 6 and 7, on page 14 of Schedule 2 of Schedule DSR-3.

Q. WERE THESE RATIOS USED IN DEVELOPING YOUR RECOMMENDED DEPRECIATION RATES?

A. Yes. The interim retirement ratios were utilized. I have not included interim additions in my calculations.

8. PRODUCTION PLANT NET SALVAGE

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

A. Net salvage occurs in two forms for Production Plant: interim net salvage and terminal 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.

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 8 of Schedule 2 of Schedule DSR-3.

Q. HOW WERE TERMINAL NET SALVAGE FACTORS DETERMINED?

A. The Company has limited experience with the dismantlement of power plants. Reliance was placed on the dismantlement estimates of other utilities. Recognition was given to the type of facility and its relative capacity. We have a collection of the dismantlement estimates of other

utilities. This collection contains the Company, plant/unit, capacity, study date, cost estimate and dismantlement cost per unit of capacity ($/kW). In general, the larger the facility, the lower the unit cost to dismantle. A figure of $50/kW was utilized in my study to estimate the dismantlement cost for Empire's Steam Production units. A figure of $13/kW was used for the Other Production units, with the exception of the State Line Combined Cycle Unit. A figure of $20/kW was utilized for it. As the terminal retirement dates approach, adjustments can be made, if necessary.

Q. HOW DID YOU UTILIZE THIS FIGURE TO DETERMINE THE TERMINAL NET SALVAGE FACTOR?

A. This unit cost per kilowatt was applied to the capacity of each of Empire's units to arrive at an estimate of the current cost to dismantle these units. This amount was divided by the plant balances to determine the terminal net salvage percentage, which is shown in Column 9 of Schedule 2 of Schedule DSR-3.

Q. DID YOU ESCALATE THE CURRENT DISMANTLEMENT COST?

A. No, although I believe that such escalation should be included in the depreciation rate calculation. This is true for two reasons. The first reason is to develop an estimate of the amount that will actually be spent at the time of dismantlement. The second reason is that the Company

practices accrual accounting and this is the correct amount to be accrued over the life of the generating unit. Thus my preferred approach is consistent with accounting principles. There is only one reason why I did not include an escalated net salvage figure in my study recommendations, namely, to mitigate the depreciation expense increase developed in my study

9. NON-PRODUCTION PLANT LIFE ANALYSIS

Q. PLEASE DISCUSS THE LIFE ANALYSIS PROCESS UTILIZED FOR TRANSMISSION, DISTRIBUTION AND GENERAL PLANT.

A. Retirement experience was collected basically from inception through 2003 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.

Q. PLEASE DESCRIBE THE LIFE ANALYSIS PHASE OF YOUR DEPRECIATION STUDY FOR TRANSMISSION, DISTRIBUTION AND GENERAL PLANT.

A. 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 ONLY 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?

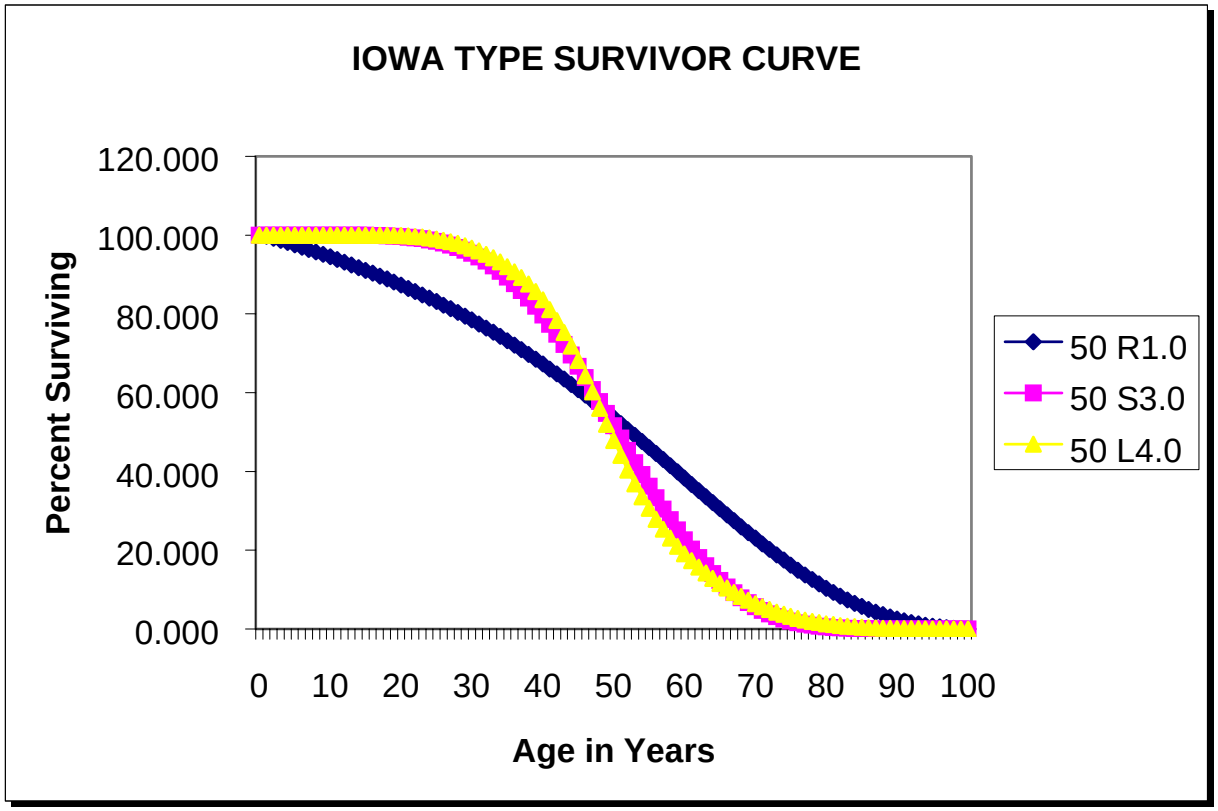
A. The Iowa-type curves were devised empirically over 60 years ago by the Engineering Research Institute at what is now Iowa State University to provide a set of standard definitions of retirement dispersion. Retirement dispersion merely recognizes that groups of assets have individual assets of different 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.

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 Deloitte 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 the transfer of the State Line facility in 2001. The recoding of this transaction had a significant impact on the salvage and cost of removal analysis for Other Production Plant

10. NON-PRODUCTION PLANT NET SALVAGE

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 1989-2003 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.

11. THEORETICAL RESERVE CONCEPTS

Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU SAY THAT THE CHANGE IN ANNUAL DEPRECIATION EXPENSE IS DUE TO THE IMPACT OF RESERVE POSITION.

A. My study developed recommended depreciation rates utilizing the remaining life technique. A remaining life depreciation rate is actually a whole life depreciation rate plus an adjustment for the difference between a theoretical reserve and the actual book reserve. This is shown in the second formula shown on page 5 of Schedule DSR-3. When the theoretical reserve exceeds the book reserve, past depreciation accruals have been inadequate compared with those annual depreciation accruals projected by the new study mortality characteristics. For example, in the case of Distribution Plant, the theoretical reserve is approximately $106 million higher than the accumulated depreciation balance on the books at December 31, 2003. This suggests that past depreciation accruals have been inappropriate, and the use of revised mortality characteristics would produce a different level of annual depreciation expense. It is important to utilize the

remaining life technique so that any "over" or "under" accruals are appropriately charged to the customer to maintain intergenerational equity. Past depreciation has been exactly what has been authorized by this Commission, although I would disagree with the methodology that has been approved.

12. CONCLUSIONS

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. I recommend that Empire adopt the depreciation rates shown in Column 8 of Schedule 1 of Schedule DSR-3, and that this Commission approve their use. I base this recommendation on the fact that I have conducted a comprehensive depreciation study, giving appropriate recognition to historical experience, recent trends, Empire expectations, accounting principles, regulatory requirements and professional judgment. I have appropriately recognized net salvage, consistent with traditional depreciation accounting and the rules of this Commission. This study and underlying workpapers support my recommendations. My study results in a fair and reasonable level of depreciation expense, which will provide Empire with adequate capital recovery until such time as a new depreciation study indicates a need for change.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes.