MISSOURI PUBLIC SERVICE COMMISSION

REVENUE REQUIREMENT

COST OF SERVICE REPORT

UNION ELECTRIC COMPANY
d/b/a AMERENUE

CASE NO. GR-2010-0363

Jefferson City, Missouri
November 8, 2010

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F. Income Tax Expense – Accounting Schedule 11

Staff's calculation of total cost of service income tax expense under existing rates is reflected on Accounting Schedule 11. The federal and state income tax reflects the current corporate federal income tax rate of 35% and the current corporate Missouri state income tax rate of 6.25%. The city income tax reflects the effective tax rate that considers the level of income generated in the City of St. Louis and any applicable credits.

As shown on Accounting Schedule 11, Staff has calculated income tax expense by applying the noted federal, state and city income tax rates to AmerenUE's operating income before taxes, less interest expense synchronized with Staff's recommended rate base and cost of capital recommendation.

At the end of Accounting Schedule 11, Staff shows the calculation of deferred income taxes. These items reflect amortizations of previously deferred taxes and investment tax credits.

Staff Expert/Witness: Stephen M. Rackers

VII. DEPRECIATION RATES

Summary

Staff conducted a depreciation study of the capital assets of AmerenUE, including an analysis of the accumulated reserve for depreciation. Based on its study, Staff recommends depreciation rates for the Company as indicated in Appendix 5, Schedule DCW-1, attached to this Report.

Staff's proposed depreciation rates for AmerenUE would decrease the current ordered annual depreciation expense from approximately $8,975,222 to $8,804,427, as indicated in Appendix 5, Schedule DCW-2. The recommendation represents a total decrease of $170,795.

Appendix 5, Schedule DCW-3 lists, by plant account, Staff's proposed depreciation rates. This schedule also provides a comparison of Staff's recommended new depreciation rates to the current rates, which the Commission ordered in Case No. GR-2007-0003, effective April 1, 2007.

Appendix 5, Schedule DCW-4 lists, by plant account, the accumulated reserve for depreciation and the theoretical reserve amount. Staff's study indicates an over-accrual of the accumulated reserve for depreciation of approximately $15,563,874.

A. Depreciation Principles

"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.

The purpose of depreciation in a regulatory setting is to recover the cost of capital assets over the useful lives of the assets. The depreciation rate for each plant account is designed to recover, over the average service life of the assets in that account, the original cost of the assets plus an estimate for any cost of removal less scrap value. Annual depreciation expense for a plant account is the depreciation rate for that plant account multiplied by the balance of plant in that account. Recovery of the annual depreciation expense returns to the Company's shareholders a portion of the costs of the capital assets. In a regulatory setting, this return is commonly referred to as a return *of* equity. The remaining portion of the costs of the capital assets of the Company, known as net plant-in-service, is returned to the Company's shareholders

in the future. The Company is permitted during this period to earn a return on the capital assets in rate base, commonly referred to as a return on net plant-in-service, a component of rate base. In a regulatory setting this return is also commonly referred to as a return *on* equity.

B. Depreciation Study

Staff used the straight line method, broad group-average life procedure, and whole life technique depreciation system for its depreciation study of the Company's capital assets. Staff has consistently used the whole life technique in developing depreciation rates that reflect expected average service lives. The whole life technique does not include an adjustment factor to address over- or under-accruals in the accumulated reserve for depreciation. Staff does not recommend any amortization of the excess accrual at this time, but will continue to monitor the balance. Staff uses the following formula to calculate a depreciation rate for each plant account:

$$\textit{Depreciation Rate} = \frac{\textit{100\% – \% Net Salvage}}{\textit{Average Service Life (years)}}$$

This is consistent with the Commission's depreciation rate formula contained its Report and Order in The Empire District Electric Company Case No. ER-2004-0570. As shown in the formula, the average service life and net salvage percentage are the depreciation parameters used to determine the depreciation rate. Staff calculated depreciation rates for each plant account based on the average service life and net salvage percentage determined applicable to each account, as shown in Appendix 5, Schedule DCW-1. That determination is addressed in detail below.

C. Average Service Life

For each plant account, the average service life ("ASL") is the expected period, in years, of the useful service of each unit of property in that account, (e.g., meters) regardless of when

that unit was first put into service (also referred to as its "placement date"). An account's ASL is developed in four steps. The first step is to review historical mortality data and historical salvage and cost of removal data. The data is checked for reasonableness, and to determine whether or not sufficient data exists to perform a statistically significant analysis. In addition, Staff reviews the data to determine if retirements recorded in one historical database are also recorded in another historical database.

The second step is to gain familiarity with the Company's facilities and to discuss current trends and developments that may influence the useful life of plant-in-service with Company operations personnel, engineers, accountants, and other depreciation experts. Current developments such as technological changes, environmental regulations, regulatory requirements, or accounting changes can all affect the average service life of property in an account. Different vintages of plant being manufactured from different materials, changes in installation practices, or the development of a life extending maintenance procedure are some examples of factors contributing to changes in average service lives.

The third step is to perform a statistical analysis of the retirement experience of each utility plant account, followed with analysis of the results for reasonableness for the type of plant in question. To evaluate the retirement experience of a Company's plant accounts, Staff uses depreciation software to analyze historical plant data by calculating the ratio of retirements to exposures by age, and solve for the percent surviving by age to develop a survivor curve for an account. Data regarding plant additions in dollars by year, or vintage, and retirements from each vintage, in dollars by year, are necessary for this analysis. The exposures at a given age are the dollars remaining from the various vintages that have lived to that age. The retirement ratio is the dollars retired during an age interval divided by the exposures at the beginning of that

interval. The survivor ratio is then calculated by subtracting the retirement ratio from "1". Multiplying each successive survivor ratio by the percent surviving of the previous age will generate a survivor curve. This original survivor curve can then be smoothed and fitted to an empirically developed statistical model known as an Iowa curve.[22] Smoothing the original survivor curve by fitting it to an Iowa curve eliminates irregularities and extrapolates stub curves to zero percent. The average service life of an account's original survivor curve is estimated as the area under the selected Iowa curve.

The fourth step is to apply Staff's engineering experience and informed judgment to the aggregate of the first three steps in the process to assign an appropriate ASL for each plant account. Staff recommends the ASLs, by account, identified in Appendix 5, Schedule DCW-1.

As noted earlier the average service life is just one of two factors determining a given depreciation rate.

D. Net Salvage Percentage

The second factor in determining a given depreciation rate is the net salvage percentage. Consideration is given to the future net salvage (or cost of removal) that property in an account may experience. The net salvage equation is expressed as follows:

Net Salvage = Gross Salvage - Cost of Removal

Gross salvage is the recovered market value of retired plant. Cost of Removal is the cost associated with the retirement and disposition of plant from service. Negative net salvage occurs when the cost of removal exceeds gross salvage. A negative net salvage is commonly referred to

[22] The Iowa curves are widely accepted models of the life characteristics of utility property. The system of Iowa curves is a family of 176 types of utility and industrial property. The curves were developed at the Iowa Engineering Experiment Station at what is presently known as Iowa State University. The Iowa curves were first published in 1935 and reconfirmed in 1980. The original survivor curve is mathematically and visually matched with various Iowa curves to determine which has the most appropriate fit, either for a significant portion of the curve or just a specified portion of the curve.

as an expense or net cost of removal. A negative net salvage percentage is commonly referred to as a net cost of removal percentage. Today, many utility accounts experience a net cost of removal; therefore, the net salvage percentage in the depreciation calculation is negative, which results in an increase to overall depreciation expense.

Net salvage percentages were developed by dividing the experienced net cost of removal by the original cost of plant retired during the same time period to calculate the net cost of removal percentage realized by the Company. This is consistent with the Commission's precedent for net salvage from its Report and Order issued in The Empire District Electric Company Case No. ER-2004-0570.

Depreciation software uses the selection of a specific Iowa curve and net salvage percentage for each plant account to calculate the account's theoretical accumulated reserve for depreciation.

E. Analysis of Accumulated Reserve for Depreciation

Another analysis performed with a depreciation study is an examination of the adequacy of the accumulated reserve for depreciation and identification of any reserve over- or under-recovery. This analysis illustrates whether prior depreciation estimates have differed significantly from actual experience. An analysis of the accumulated reserve for depreciation reserve is performed by comparing the existing accumulated reserve for depreciation as of a certain date, in this case, December 31, 2008.

A depreciation reserve account is the amount for plant investment and net cost of removal that has been recovered in depreciation rates over the life of the capital assets, reduced by retirement amounts, costs of removal experienced, and transfers out, and increased by actual salvage proceeds collected, and transfers in. The aggregate of the depreciation reserve accounts

is known as the accumulated reserve for depreciation. The theoretical accumulated reserve for depreciation amount can be viewed as the level of accumulated depreciation reserve that would exist today if the selected depreciation parameters had been used since the inception of placing plant in service. If the amount of the actual accumulated reserve for depreciation is more than the theoretical amount, an over-accrual is noted. Conversely, if the actual accumulated reserve for depreciation is less than the theoretical amount, an under-accrual is noted.

The need for, the magnitude of, and the timing of an adjustment should be based upon consideration of several factors: the characteristics of the account, the causes of the difference, and the year-to-year volatility of the accumulated provision for depreciation and the magnitude of the imbalance. Future service life cannot be estimated to a degree of certainty that guarantees that the actual life will not be different. In fact, the depreciation estimation process is dynamic and it is possible that the currently determined ASL recommended by Staff will differ from the ASL that occurs.

F. Recommendations

Staff recommends that the Commission order the depreciation rates proposed in Appendix 5, Schedule DCW-1. Staff also recommends that AmerenUE be ordered to follow the precedent and guidance sought and received in Case No. ER-2004-0570, that a separate accounting be kept of its amounts accrued for recovery of its initial investment in plant from the amounts accrued for the cost of removal. Staff's recommendation addresses the Commission's precedent as stated in Case No. ER-2004-0570. Staff's proposed depreciation rates for AmerenUE would decrease the current ordered annual depreciation expense from approximately $8,975,222 to $8,804,427, as indicated in Appendix 5, Schedule DCW-2. The recommendation

represents a total decrease of $170,795. Under the traditional accrual method, the depreciation rate for a particular asset or group of assets is calculated as follows:

$$\textit{Depreciation Rate} = \frac{\textit{100\% – \% Net Salvage}}{\textit{Average Service Life (years)}}$$

In this formula, net salvage equals the gross salvage value of the asset minus the cost of removing the asset from service. The net salvage percentage is determined by dividing the net salvage experienced for a period of time by the original cost of the property retired during that same period of time. This is the accrual method used by Staff to determine the depreciation rate.

Staff Expert/Witness: David Williams

APPENDICES

Appendix 1 - Staff Credentials

Appendix 2 - Support for Staff Cost of Capital Recommendation - Zephania Marevangepo

Appendix 3 - Weather Normal Variables Used for Weather Normalization - Seoung Joun Won

Appendix 4 - Weather Normalization of Sales - Kim Cox

Appendix 5 - Depreciation Rates - David Williams