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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF ROCKY MOUNTAIN POWER FOR AN ORDER AUTHORIZING A CHANGE IN DEPRECIATION RATES APPLICABLE TO ELECTRIC PROPERTY	)))))))	**CASE NO. PAC-E-07-14** **Direct Testimony of Donald S. Roff**

ROCKY MOUNTAIN POWER

CASE NO. PAC-E-07-14

August 2007

Introduction and Background

Q. Please state your name, occupation, business address, employer and job title.

A. My name is Donald S. Roff. I am President of Depreciation Specialty Resources, a consulting firm serving the utility industry. My business address is 2832 Gainesborough Drive, Dallas, Texas 75287-3483.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of PacifiCorp ("the Company").

Q. Please state your qualifications.

A. My qualifications are described on Exhibit No. 3.

Q. Have you previously testified before this or any other regulatory body?

A. Yes. A list of my regulatory appearances and related jurisdictions is attached as Exhibit No. 4.

Q. What is the purpose of your testimony?

A. I have been asked by the Company to testify as to the recommended depreciation rates to be used by it for the accrual of depreciation expense.

Q. Please summarize your testimony.

A. Based upon my depreciation study, a copy of which is attached to my Direct Testimony as Exhibit No. 5, conducted as of December 31, 2006, I recommend changes to the depreciation rates currently in use by using the remaining life rates recommended in the depreciation study, which provide for full recovery of net investment adjusted for net salvage over the future useful life of each asset category, and that are consistent with past practice of the Company. The proposed rates are illustrated by the following comparison:

Function	Existing %	Recommended %
Steam Production Plant	3.14	2.01
Hydraulic Production Plant	2.42	2.82
Other Production Plant	3.42	3.56
Transmission Plant	2.12	2.15
Distribution Plant	2.74	3.26
General Plant	4.69	4.54
Mining Operations	5.87	3.52
Total Electric Plant	2.91	2.69

This summary is taken from Table A, page 3 of Exhibit No. 5.

Application of my recommended rates to the December 31, 2006 depreciable balances results in a decrease in annual depreciation expense of $30,577,422. The following sections of my testimony discuss the depreciation study procedure, life analysis, interim activity, salvage and cost of removal analysis, and the results for steam, hydraulic and other production plant, transmission, distribution and general plant, and mining operations and my recommendations.

Q. **What are the primary reasons for the change in depreciation that you recommend?**

A. There are two factors that influence the level of depreciation expense change that I recommend. The first factor is recognition of more negative net salvage for transmission and distribution plant asset categories, reflective of current experience, which increases annual depreciation expense. The second element is longer life spans for the thermal generating units, which decreases annual depreciation expense.

Depreciation Study Procedure

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, including the following: (1) salvage (net salvage) is to be recognized; (2) the allocation of costs is over the useful life of the assets; (3) grouping of assets is permissible; (4) depreciation accounting is not a valuation process; and (5) 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 16 of Exhibit No. 5. 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 and are expected to continue to be so determined, asset consumption must be directly

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

measured and reflected in 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 Uniform System of Accounts, followed by the Company, provides a series of definitions related to depreciation as shown on Page 8 of Exhibit No. 5. 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.

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, 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 activity factors, which provide a form of retirement dispersion.

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 assisted with this effort and provided me with a large amount of historical accounting data. 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. 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. The rate calculation phase merely utilizes the parameters developed in the other phases in the computation of the recommended depreciation rates.

Q. What are the parameters used in the calculation of your recommended depreciation rates?

A. The parameters are the estimated retirement date for production plants or average service life for transmission, distribution and general plant; retirement dispersion defined by interim addition and retirement factors for production plant and by Iowa curves for the mass accounts; and interim and terminal net salvage factors for production plant and terminal net salvage factors for the mass accounts. Also used are the depreciable plant balance, the accumulated provision for depreciation, and the average remaining life. How these factors are used in the calculation is discussed on Pages 15 and 16 of Exhibit No. 5. Individual parameters are shown on Schedule 2 of Exhibit No. 5.

Life Analysis

Q. **Please explain the life analysis phase of your study of production plant.**

A. There are two parts to the life analysis phase of my study of production plant. The first is the determination of the estimated retirement date for each plant suitable for the calculation of depreciation rates. The second part is the determination of interim retirement ratios and interim addition factors from an analysis of historical experience.

Q. **What was the basis for the retirement dates used in your depreciation study of production plant?**

A. These retirement dates were provided to me by the Company's planning personnel, and are contained on Exhibit No. 5, Schedule 2. It is my understanding that these estimated retirement dates give consideration to the age of the plant, its operating characteristics, and economic and environmental constraints.

Q. **Are these dates reasonable and consistent with your knowledge and experience?**

A. Yes. These retirement dates produce life spans, which are reasonable and consistent with my experience. It is my understanding that these dates reflect the current best estimate of when the generating units will retire, giving due consideration to each unit's age, location, operating characteristics, ongoing capital replacements and expected future usage, and therefore represent the appropriate period over which the allocation of cost should occur.

Q. Please describe the life analysis procedure utilized for non-production plant asset categories.

A. For most asset categories, the Company maintains vintage accounting records, that is, the age of property retired and property surviving is known. The exception is Account 370, Meters and the Distribution line accounts in Utah and Idaho (Account 364 – Account 373). For the aged asset categories the actuarial method of life analysis was utilized. For the unaged asset categories, the Simulated Plant Record ("SPR") method was utilized.

Q. Please Describe Actuarial Analysis.

A. Actuarial analysis uses the age information contained in the historical property records to determine life tables (survivor curves) for various bands of experience. These plots of percent surviving as a function of age are then compared to standard distributions (Iowa curves) to arrive at an historical average service life and curve shape.

Q. Please describe SPR analysis.

A. SPR analysis determines retirement dispersion and average service life combinations for various bands of years that best match the actual retirements and/or balances for each asset category. The simulated balances procedure consists of applying survivor ratios (portion surviving at each age) from Iowa-type dispersion patterns in order to calculate annual balances, and then comparing the calculated balances with the actual balances for several periods, followed by statistical comparisons of differences in balances. The simulated retirement procedure is similar, except that the retirement frequency rates of the Iowa patterns are utilized to calculate annual retirements, and the comparisons are to actual retirements rather than to balances. Tabulations of the best ranking curves were made and this became the starting point for the evaluation phase of my depreciation study.

<u>**Interim Activity**</u>

Q. What are interim retirements?

A. Interim retirements are the retirements of plant components between the date of original installation and the date of final retirement of a plant or unit.

Q. What are interim additions?

A. Interim additions are the replacement of retired plant components or the addition of new plant components between the date of original installation and the date of final retirement of a plant or unit that were not originally necessary.

Q. Is the analysis of interim activity, that is, both interim additions and interim retirements, an accepted analytical procedure?

A. Yes. These accounting histories are readily available, sufficient, and provide useful information upon which to base meaningful conclusions. A description of this analysis process is provided in Exhibit No. 5 at Page 11.

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 items are replaced or retired. This is clearly evident from a review of historical investment 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. Recognition of the effect of these interim additions in the depreciation rate calculation is necessary because the estimated retirement dates cannot occur without the replacement activity, and the estimated retirement dates assume this activity will occur.

Q. What interim activity factors were developed in your depreciation study?

A. The interim retirement ratios and interim addition factors utilized in my depreciation study are shown in Exhibit No. 5, Schedule 2.

Q. Were these factors used in the calculation of your recommended depreciation rates for production plant?

A. My recommended depreciation rates for production plant include both an interim addition factor and an interim retirement factor.

Q. Why were interim additions included?

A. While it would be appropriate to include all interim additions, they were only included in the depreciation rate calculations for the next five years and were limited to the amount of interim retirements.

Q. What would be the effect of including all interim additions in the depreciation rate calculation?

A. The recommended depreciation rates for production plant would have been substantially higher.

Q. What is the effect on the annual depreciation rate of ignoring certain of these interim additions?

A. Initially, the depreciation rate would be slightly lower, but would increase at each recalculation. This ever-increasing pattern of depreciation rates would be appropriate only if asset consumption is ever increasing. This is the reason that interim additions or replacements were included for the next five year period.

Salvage and Cost of Removal Analysis

Q. Please discuss the cost of removal and salvage analysis portion of your study of production plant.

A. There are two separate components of cost of removal and salvage for Production Plant: interim and terminal. Interim net salvage refers to the cost of removal net of salvage related to interim retirements. Terminal net salvage refers to the net demolition cost of a plant or unit at final retirement. Interim net salvage factors were determined based upon an analysis of historical experience. Terminal net salvage factors were projected based upon a review of the site-specific demolition cost estimates of other companies.

Q. How were the interim net salvage factors for production plant determined?

A. Primary account summaries of retirements, salvage and cost of removal were ~~provided by Company personnel. I~~ examined the ratio of salvage, cost of removal and net salvage to retirements and looked at the trends over time. I then selected an interim net salvage factor for each primary account.

Q. How were the terminal net salvage factors for production plant determined?

A. I have collected the site-specific demolition cost estimates of over 500 units, which are in the public record. For each unit I have computed the net demolition cost per kW of generating capacity by fuel type. This average figure is about $54/kW in 2006 price levels for coal-fired units. Exhibit No. 6 provides a summary of the site-specific demolition cost studies. I conservatively used an estimate of $50/kW for coal units to recognize the ongoing environmental control facilities additions. This number is conservative because additional pollution control requirements are expected which will increase this unit cost. The net demolition amounts were then allocated to accounts on the basis of plant investment, and used in the depreciation rate calculations. A similar process was used for the units that are not coal-fired. It should be noted that the Company has developed some site-specific demolition cost estimates for certain of its plants. This study was conducted in 2004 by Black & Veatch. This study supports my estimated unit cost. Terminal net salvage has not been recognized for most hydraulic production plants. A decommissioning reserve has been proposed for plants which have a definitive decommissioning agreement, as well as for small plants for which the Company has estimated some probability of being decommissioned in the next ten-year period.

Steam Production Plant Results

Q. Please summarize your results for steam production plant.

A. Use of the parameters described above results in a composite depreciation rate of 2.01 percent, which produces an annual depreciation expense decrease of $52,800,000, or about 36 percent below the existing rate.

Q. What is the reason for this decrease in depreciation expense?

A. The primary reason for the decrease is longer life spans for the thermal units. The basis for these retirement dates is discussed in the testimony of Mr. Mark C. Mansfield.

<u>Hydraulic Production Plant Results</u>

Q. Please discuss the results of your depreciation study for hydraulic production plant.

A. Retirement dates were tied to license expiration dates or expected license renewal dates. Interim activity has been limited, and interim additions equal to interim retirements were included for the period 2007 through 2011, although a figure greater than one is justified by historical experience. The composite depreciation rate for Hydraulic Production Plant increased from 2.42 percent to 2.82 percent, primarily due to the effect of some relatively new investments. Note that this depreciation rate comparison incorporates a decommissioning reserve provision. A decommissioning reserve has been proposed for plants which have a definite decommissioning agreement as well as small hydraulic plants which the Company has estimated as having some probability of being decommissioned in the next ten-year period. The net change in annual depreciation for Hydraulic Production Plant is an increase of approximately $2,033,000.

<u>Other Production Plant Results</u>

Q. Please discuss the results of your study of other production plant.

A. The composite depreciation rate for Other Production Plant increased from 3.42 percent to 3.56 percent, reflecting little change to existing parameters. The change produced an increase in annual depreciation expense of $1,108,000, or about 4 percent, primarily attributable to Hermiston and Little Mountain.

Transmission, Distribution and General Plant

Q. Please discuss the life analysis procedure for transmission, distribution and general plant.

A. For most asset categories the age of both surviving and retired property is known, and actuarial analysis was utilized for these property groups. Actuarial analysis is described on Page 12 of Exhibit No. 5. For some asset groups, the age of property retired is not known, and a simulated plant record analysis was performed. The SPR method determines retirement dispersion and average service life combinations for various bands of years that best match the actual retirements and balances for each asset category.

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 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 was 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. Please explain the salvage and cost of removal analysis.

A. Annual salvage amounts, cost of removal and retirements were provided by functional group for the period 1992 though 2006. Annual salvage, cost of removal and net salvage percentages were calculated by dividing by the retirement amounts. Rolling and shrinking bands were also developed to illustrate trends. A special analysis was conducted for the effect of third-party reimbursements for the period 2004 – 2006. Retirements, salvage and cost of removal related to these third-party reimbursements were eliminated from the analyses. This treatment resulted in slightly more negative net salvage factors.

Q. **Please summarize your results for transmission, distribution and general plant.**

A. In general, average service lives have increased, and net salvage factors have become more negative. The composite depreciation rate for transmission plant increased slightly from 2.12 percent to 2.15 percent, an annual expense increase of about $668,000, or about 1 percent. The primary reasons are marginally longer average service lives and slightly more negative net salvage.

The composite depreciation rate for Distribution Plant increased from 2.74 percent to 3.26 percent, an annual expense increase of over $23,900,000, or about 19 percent. Increased average service lives were more than offset by more negative net salvage.

The composite depreciation rate for General Plant decreased from 4.69 percent to 4.54 percent, an annual expense decrease of roughly $901,000, or about 3 percent. The primary reason for the decrease is slightly longer average service lives.

Mining Operations

Q. **Please summarize your results for mining operations.**

A. The composite depreciation rate decreased from 5.87 percent to 3.52 percent. Average service lives have both increased and decreased, as have net salvage allowances.

<u>Total Change in Annual Depreciation</u>

Q. What is the total change in annual depreciation indicated by your study?

A. At the total Company depreciable investment level, the decrease in annual depreciation expense indicated by my study is about $30,600,000.

<u>Summary and Recommendations</u>

Q. Please summarize your recommendations.

A. I recommend that PacifiCorp adopt the depreciation rates shown in Column 12 of Schedule 1 of Exhibit No. 5, 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 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.

Q. Does this complete your direct testimony?

A. Yes, it does.

Case No. PAC-E-07-14
Exhibit No. 3
Witness: Donald S. Roff

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Exhibit Accompanying Direct Testimony of Donald S. Roff

August 2007

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.

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Case No. PAC-E-07-14
Exhibit No. 4
Witness: Donald S. Roff

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

ROCKY MOUNTAIN POWER

Exhibit Accompanying Direct Testimony of Donald S. Roff

August 2007

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/GR0105029	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
Docket No. 05-00258	July 2006	Atmos Energy Corporation	Tennessee	Gas Depreciation Rates and Accounting
Docket No. 06S-234EG	Sept 2006	Public Service Company of Colorado	Colorado	Electric Depreciation Rates and Accounting
Docket No. GUD No. 9676	Oct 2006	Atmos Energy Corporation	Texas	Gas Depreciation Rates and Accounting
Case No. 2006-00464	Jan 2007	Atmos Energy Corporation	Kentucky	Gas Depreciation Rates and Accounting
Docket No. 07-	May 2007	Atmos Energy Corporation	Tennessee	Gas Depreciation Rates and Accounting

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August 2007

Depreciation Specialty Resources

PacifiCorp

Book Depreciation Study of Electric Property
As of December 31, 2006

2832 Gainesborough Drive, Dallas, TX 75287-3483 469-964-9090

PacifiCorp

Book Depreciation Study of Electric Property as of December 31, 2006

August 2007

Mr. David Mendez

Chief Accounting Officer
PacifiCorp
825 NE Multnomah, Suite 1900
Portland, Oregon 97232

Dear Mr. Mendez:

In accordance with your request, we have conducted a book depreciation study of the Electric Utility property of PacifiCorp ("PacifiCorp" or the "Company"). The study recognized addition and retirement experience through March 31, 2006, and the comparisons presented herein are based on depreciable plant balances as December 31, 2006

Study depreciation rates have been calculated using the average life group ("ALG") procedure and the remaining life technique, consistent with prior studies.

The summary shown in Table A (following) is taken from Schedule 1, which show the annual depreciation provisions for the existing and study rates. The recommended depreciation rates are developed in Schedule 1. Based on the December 31, 2006, depreciable plant balances, study rates will result in a decrease in total annual depreciation provisions. The existing rates are those approved by each state commission. Schedule 2 shows the mortality characteristics (average service life, retirement dispersion, net salvage and retirement years) determined for each depreciable property group, as well as the mortality characteristics reflected in the existing rates.

Schedule 3 shows an example (for Account 312, Boiler Plant Equipment for the Hunter Plant) of the depreciation rate calculation procedure used for Production Plant.

A comparison of the effect of each set of study account rates with that of the existing rates is shown on the next page (Table A).

TABLE A

[1]	[2]	[3]	[4]	[5]	[6]	[7]
	12/31/2006	Accrual Rate		Annual Accrual		Increase or
Function	Balance	Existing	Proposed	Existing	Proposed	(Decrease)
	$	%	%	$	$	$
Production Plant						
Steam Production	4,687,335,913	3.14	2.01	146,994,980	94,177,049	(52,817,931)
Hydraulic Production	507,940,786	2.42	2.82	12,314,551	14,347,241	2,032,690
Other Production	787,355,884	3.42	3.56	26,931,998	28,039,681	1,107,683
Subtotal Production	5,982,632,583	3.11	2.28	186,241,529	136,563,971	(49,677,558)
Transmission Plant (System)	2,652,005,379	2.12	2.15	56,313,992	56,981,736	667,744
Distribution Plant						
Oregon	1,484,738,167	2.89	3.45	42,855,111	51,177,698	8,322,587
Washington	348,051,140	2.97	3.24	10,344,646	11,273,026	928,380
Idaho	228,782,258	2.73	2.78	6,248,403	6,359,143	110,740
Wyoming	448,005,125	2.80	3.08	12,564,145	13,798,530	1,234,385
California	189,247,340	2.99	3.80	5,658,122	7,182,106	1,523,984
Utah	1,904,102,727	2.55	3.17	48,603,233	60,420,715	11,817,482
Subtotal Distribution	4,602,926,757	2.74	3.26	126,273,660	150,211,218	23,937,558
General Plant						
Oregon	194,962,540	5.05	4.37	9,854,478	8,520,984	(1,333,494)
Washington	36,684,506	5.54	5.49	2,031,786	2,014,741	(17,045)
Idaho	35,656,561	4.61	3.81	1,644,028	1,358,903	(285,125)
Montana	8,007,193	4.75	3.17	380,659	254,150	(126,509)
Wyoming	76,241,977	4.49	5.46	3,422,385	4,159,676	737,291
California	11,276,567	4.05	5.15	456,660	580,303	123,643
Utah	252,988,167	4.38	4.38	11,075,195	11,075,649	454
Subtotal General	615,817,511	4.69	4.54	28,865,191	27,964,406	(900,785)
Mining Operations						
Utah	196,152,876	5.87	3.52	11,510,180	6,905,799	(4,604,381)
Total Depreciable Plant	14,049,535,106	2.91	2.69	409,204,552	378,627,130	(30,577,422)

The tables below compare the functional lives and net salvage allowance for the prior study and this study:

AVERAGE SERVICE LIVES

AVERAGE LIFE

Plant Function	Existing Years	Proposed Years
Production		
Steam	39	50
Hydraulic	62	62
Other	33	30
Transmission	57	58
Distribution		
Oregon	44	47
Washington	49	49
Idaho	45	44
Wyoming	45	47
California	50	52
Utah	45	46
General		
Oregon	26	29
Washington	22	21
Idaho	25	26
Montana	22	25
Wyoming	20	19
California	21	23
Utah	25	26
Mining Operations		
Utah	16	22

NET SALVAGE

Plant Function	Existing %	Proposed %
Production		
Steam	(4)	(8)
Hydraulic	(7)	(8)
Other	(1)	(2)
Transmission	(20)	(25)
Distribution		
Oregon	(32)	(57)
Washington	(49)	(56)
Idaho	(23)	(34)
Wyoming	(32)	(47)
California	(46)	(85)
Utah	(23)	(42)
General		
Oregon	3	1
Washington	(4)	1
Idaho	6	4
Montana	-	(1)
Wyoming	13	8
California	9	3
Utah	6	6
Mining Operations		
Utah	1	2

The following sections of this report discuss the differences between the rate calculation procedures and techniques, describe the methods of analysis used and the bases for the conclusions reached, and recommend both immediate and future actions.

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

Yours truly,

Donald S. Roff

Donald S. Roff

President

Depreciation Specialty Resources