<u>Introduction and Background</u>

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 RMP___(DSR-1).

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 RMP___(DSR-2).

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 RMP___(DSR-3), 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 RMP___(DSR-3). 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 RMP___(DSR-3). Rational means that the pattern of depreciation, in this case, the depreciation rate itself, must match either the pattern of revenues produced by the asset, or match the consumption of the asset. Since revenues are determined through regulation and are expected to continue to be so determined, asset consumption

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

must be directly 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 RMP___(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.

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 RMP___(DSR-3).

Individual parameters are shown on Schedule 2 of Exhibit RMP___(DSR-3).

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 RMP___(DSR-3), 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.

Interim Activity

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 RMP___(DSR-3) 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 RMP___(DSR-3), 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 RMP___(DSR-4) 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.

<u>Steam Production Plant Results</u>

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.

<u>Transmission, Distribution and General Plant</u>

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 RMP___(DSR-3). 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 RMP___(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 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.