# 2008 Electric System Cost-of-Service Study 

Public Utility District No. 1<br>of Okanogan County, Washington

May 2009

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Public Utility District No. 1 of Okanogan County, Washington

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May 8, 2009

Mr. John R. Grubich<br>General Manager<br>Okanogan County Public Utility District<br>P.O. Box 912<br>1331 2nd Avenue North<br>Okanogan, Washington 98840

## Subject: 2008 Electric System Cost-of-Service Study

Dear Mr. Grubich:
R. W. Beck, Inc., is pleased to submit this final report on the 2008 Electric System Cost-ofService Study for Okanogan County Public Utility District. The report describes the development of a cost-of-service study that will provide Okanogan County PUD with an understanding of costs to provide electric service to various customer classes and a basis for evaluating future rate options. This report sets forth and summarizes the methodology, assumptions and results of the analysis.

The preparation of the cost-of-service analysis and this report was a collaborative effort by Okanogan County PUD staff and our staff. On behalf of R. W. Beck, we wish to express our appreciation for your assistance on this effort along with the assistance of other Okanogan County PUD staff members who provided the timely information and review necessary for the successful completion of this project.

Once again, we appreciate the opportunity to be of service to Okanogan County PUD.
Sincerely,
R. W. BECK, INC.

## Richard Cuthbert

Richard W. Cuthbert
Principal and Senior Director

# Public Utility District No. 1 of Okanogan County <br> 2008 Electric System Cost-of-Service Study 

Table of Contents

Letter of Transmittal
Overview ..... 1
Background ..... 1
Methodology ..... 3
Key Assumptions ..... 3
District’s 2007 Revenue Requirements ..... 4
Cost-of-Service Analysis ..... 5
Summary of Cost-of-Service Analysis Results ..... 9
Unit Cost Analysis Results ..... 12
Issues for Additional Consideration ..... 12
Appendices
A District’s Test Year 2007 Revenue Requirements
B Cost-of-Service Analysis Results-Functionalization
C Cost-of-Service Analysis Results-Classification
D Cost-of-Service Analysis Results—Allocation
E Development of Load Research Analysis Information
List of Tables
1 Existing Rates as of February 2009
2 Summary of TY 2007 Revenue Requirements
3 Classification of Cost of Service
4 Allocated Cost of Service by Customer Class
5 Summary of Cost-of-Service Results
List of Figures
1 TY 2007 Functionalized Revenue Requirements from Rates
2 Classification of TY 2007 Revenue Requirements
3 TY 2007 Cost-of-Service Results Using Peak Responsibility Method
4 TY 2007 Cost-of-Service Results Using Average and Excess Method

# 2008 Electric System Cost-of-Service Study 

## Overview

Okanogan County Public Utility District (Okanogan County PUD or the District) requested that R. W. Beck, Inc., complete a cost-of-service study for the District so that it would have a viable basis for making future rate change decisions. The District's last rate changes were made in 2001 based on across-the-board rate increases for all customer classes to meet the financial needs at that time without reference to a cost-of-service study.
The District's 2008 cost-of-service analysis was prepared using the District's normalized test year 2007 (TY 2007) revenue requirements and followed the general framework discussed in the January 1992 "NARUC Electric Utility Cost Allocation Manual" (NARUC Manual). This report presents the results of this TY 2007 cost-ofservice analysis. The results of this study provide the District with a better understanding of its costs to provide electric service to its various customer classes, and also serve as a basis to explore potential rate adjustment options in the future.

## Background

The District currently has six major customer classes, ${ }^{1}$ each with separate rates. The customer and rate classes are defined as follows:

- Residential: Service applicable to each individual customer/family residing in a single family dwelling or multiple family building, and to a farm which processes only its own products.
- General Service: Service applicable to any one individual customer complex for which another specific rate schedule is not available.
- Primary Industrial: Service applicable to any load with measured monthly demand of at least $1,000 \mathrm{~kW}$ and not more than a $10,000 \mathrm{~kW}$ average annual increase.
- Irrigation: Applicable to service for irrigation or drainage and incidental farm use. The schedule is based on continuous service for the irrigation season of April 1 through October 31.
- Frost Control: Applicable to service to wind machines or pumps used only for frost protection.
- Street Lighting: Applicable to any publicly owned organization constituted by State law for lighting of streets, alleys and thoroughfares.

[^0]All of the customer classes have a monthly basic charge and one or more energy charges with either uniform or declining block rate structures. The General Service and Industrial classes also have demand charges. The District's current rates are summarized in Table 1.

## Table 1 <br> Okanogan County PUD <br> Existing Rates as of February 2009

|  | Rates | Units |
| :---: | :---: | :---: |
| Residential Rates |  |  |
| Basic Charge | 10.00 | dollars per month |
| Energy Charge | 4.400 | cents per kWh |
| Minimum Charge | 10.00 | dollars per month |
| General Service Rates |  |  |
| Basic Charge | 12.00 | dollars per month |
| Energy Charge |  |  |
| 0-15,000 kWh | 5.300 | cents per kWh |
| 15,000+ kWh | 4.800 | cents per kWh |
| Demand Charge | 2.00 | dollars per kW > 50 kW per month |
| Minimum Charge | 12.00 | dollars per month |
| Industrial Rates |  |  |
| Basic Charge | 760.00 | dollars per month |
| Energy Charge | 3.750 | cents per kWh |
| Demand Charge | 2.25 | dollars per kW per month |
| Minimum Charge | 760.00 | dollars per month |
| Irrigation Rates |  |  |
| Horsepower |  |  |
| 0-74.9 HP | 1.55 | dollars per HP per month |
| 75+ HP | 1.00 | dollars per HP per month |
| Energy Charge | 2.870 | cents per kWh |
| Frost Control Rates |  |  |
| Facilities Charge | 3.45 | dollars per HP per year |
| Energy Charge | 5.300 | cents per kWh |
| Street Lighting Rates |  |  |
| 175W MVP or 100W HPS | 6.40 | dollars per month |
| 400W MVP or 200W HPS | 9.80 | dollars per month |

The District's last electric system rate change was made in 2001. Since then, the District's annual energy sales have increased approximately 45 percent, and the average number of member customers has increased by approximately 6 percent.

The results of the TY 2007 cost-of-service analysis are summarized in this report. A summary of the District's TY 2007 revenue requirements is provided in Appendix A. The detailed functionalization of normalized TY 2007 revenue requirements is provided in Appendix B, the detailed classification of the revenue requirements is provided in Appendix C, and the detailed allocation of revenue requirements to customer classes is provided in Appendix D. A summary of the cost-of-service results by customer class along with unit cost estimates for TY 2007 are also included in Appendix D. The methodology and results of the load research analysis that was used in this cost-of-service analysis is provided in Appendix E.

## Methodology

The process of developing this cost-of-service analysis included the functionalization, classification and allocation of the District's TY 2007 revenue requirements in collaboration with District staff and management. The District's revenue requirements were normalized for known and measurable changes occurring since 2007 and were organized by various functions. Each of the functionalized revenue requirement items was classified into demand, energy or customer components. The classified revenue requirements were then allocated to customer classes based on appropriate allocation factors developed for each classified cost component. Estimated revenues at existing rates for each rate class were compared to the cost-of-service results to determine the percentage rate change necessary for each rate class to achieve the cost-of-service level. Unit demand, energy and customer costs were also developed. This methodology is consistent with the general framework discussed in the NARUC Manual.

## Key Assumptions

A number of assumptions were necessary in the preparation of this study. The following key assumptions were made in the preparation of the cost-of-service analysis.

- Revenue Neutral Analysis: No overall increase or decrease in TY 2007 revenue requirements or rates was assumed. The resulting Debt Service Coverage Ratio (DSCR) for the adjusted TY 2007 revenue requirement is 8.39 and the Times Interest Earned Ratio (TIER) is 12.82.
- Historical Test Year: The revenue requirements presented in this report were developed based on historical audited District calendar year 2007 results with normalizations. The rate base was developed based on the average of historical audited calendar year end results from years 2006 and 2007.
- Allocation Methodology for Production and Transmission Demand Costs: Production and transmission demand costs were allocated using both the peak responsibility and average and excess methods of demand cost allocation. The two methodologies are described later in this report, and the results using each methodology are presented.


## District's 2007 Revenue Requirements

The District's revenue requirements for this cost-of-service study were developed in accordance with standard cost-of-service procedures and methodologies used in the electric utility industry. Revenue requirements consist of the sum of the electric system's operating costs plus an amount associated with serving the electric system's debt and capital funding needs. The net revenue requirement from rates, after accounting for other income sources available to the District, is the total electric system cost of service used in this study.
The historical test year used in this study is based on actual operations for the twelvemonth period ending December 31, 2007. These test year results are based on the audited December 31, 2007 operating and financial results of the District, including both actual revenues realized and actual operating costs. A normalized revenue requirements analysis was prepared using adjustments for several modifications to reflect more normal operating conditions as well as significant known and measurable changes. These normalization adjustments typically include a restatement of the test period data to reflect any abnormal events, unusual circumstances, or non-recurring items, as well as any significant known and measurable changes that have occurred since the test year. Detailed tables for the normalized revenue requirements analysis are provided in Appendix A.

The District's normalized operating results and revenue requirements for TY 2007 are summarized in Table 2 and Figure 1. The pro forma normalizing adjustments made in preparing this revenue requirements analysis are included in Appendix A. In aggregate, the adjustments resulted in annual test year revenues of $\$ 43.5$ million for the District, test year operating expenses of $\$ 37.9$ million, and a total electric system revenue requirement of $\$ 47.6$ million. The adjusted revenue requirement from rates is $\$ 42.9$ million. This adjusted test year revenue requirements level was used as the basis for the cost-of-service analysis presented in the next section of this report.

## Table 2 <br> Okanogan County PUD <br> Summary of TY 2007 Revenue Requirements

| Description | Historical Test Year 2007 | Pro forma Adjustments | Adjusted <br> Test Year 2007 |
| :---: | :---: | :---: | :---: |
| Total Revenues From Sales of Electricity | 42,853,635 | - | 42,853,635 |
| Other Electric Revenues | 690,773 | - | 690,773 |
| Total Revenues | 43,544,408 | - | 43,544,408 |
| Operating Expenses | 37,373,419 | $(323,191)$ | 37,050,227 |
| Other Expenses | 826,412 | - | 826,412 |
| Total Operating Cost of Service | 38,199,831 | $(323,191)$ | 37,876,640 |
| Margins or Increase in Net Assets | 9,447,737 | 323,191 | 9,770,928 |
| Operating Revenue Requirements | 47,647,568 | - | 47,647,568 |
| Total Non-Operating Revenues | 4,103,159 | - | 4,103,159 |
| Total Revenue Requirements | 47,647,568 | - | 47,647,568 |
| Less Interest Income | $(2,168,599)$ | - | $(2,168,599)$ |
| Less Contributions in Aid of Construction | $(1,934,560)$ | - | $(1,934,560)$ |
| Less Other Revenues | $(690,773)$ | - | $(690,773)$ |
| Revenue Requirements from Rates | 42,853,635 | - | 42,853,635 |
| Revenue Increase (Decrease) | - |  |  |
| Percent Change | - |  | 0.0\% |
| Debt Service Coverage Ratio (DSCR) | 8.18 |  | 8.39 |
| TIER (Operating) | 7.47 |  | 7.86 |
| TIER (Total) | 12.43 |  | 12.82 |

## Cost-of-Service Analysis

## Functionalization

The detailed costs that compose the District's normalized TY 2007 revenue requirements were assigned to production, transmission and distribution functions. Administrative and general costs were either directly assigned to the distribution function or functionalized based on labor ratios. Figure 1 shows the District's test year functionalized revenue requirements from rates. See Appendix B for analysis of the functionalized TY 2007 revenue requirements.


Figure 1: Okanogan County PUD TY 2007 Functionalized Revenue Requirements from Rates

## Classification

Table 3 provides a summary of the classification of the TY 2007 revenue requirements from rates divided into demand, energy and customer components. Classification of costs was generally performed using the methodologies set forth in the NARUC Manual.

Table 3
Okanogan County PUD
Classification of Cost of Service
(TY 2007)

| Description | Demand | Energy | Customer | Total |
| :--- | ---: | ---: | ---: | ---: |
| Production | $\$ 8,588,213$ | $\$ 17,620,533$ | $\$ 0$ | $\$ 26,208,747$ |
| Transmission | $1,422,276$ | 0 | 0 | $1,422,276$ |
| Distribution | $10,767,201$ | 0 | $4,455,411$ | $15,222,612$ |
| Total Cost of Service | $\$ 20,777,691$ | $\$ 17,620,533$ | $\$ 4,455,411$ | $\$ 42,853,635$ |

Figure 2 shows the classification of the test year revenue requirements from rates. See Appendix C for a more detailed classification.


Figure 2: Okanogan County PUD Classification of TY 2007 Revenue Requirements

## Allocation

After functionalized costs were classified into cost components, an allocation was made of these costs to the District's customer classes. The three basic methods of allocating demand costs to classes of service discussed in the NARUC Manual are: (a) the peak responsibility (coincident peak) method, (b) the non-coincident peak method, and (c) the average and excess demand method. Under the peak responsibility method, system demand costs are allocated among classes in proportion to each class's load at the time of the system peak. Under the non-coincident peak method, system demand costs are allocated to classes in proportion to class maximum loads, regardless of time of occurrence. The average and excess demand method allocates costs to rate classes using a factor that combines the classes' average demands and non-coincident peak demands. Variations of these methods are also commonly used.

The main allocation factors developed for this cost-of-service analysis are described below:

| Allocation Factor | Description |
| :--- | :--- |
| $\mathbf{4}$ CP | The 4 coincident peak allocator represents each class's <br> contribution to the system peak during the 4 peak <br> months of the year, based on 2007 load research <br> analysis results provided in Appendix E. |
| $\mathbf{1 2}$ NCP | The 12 non-coincident peak allocator relates the peak <br> demand for each customer class, not necessarily <br> coincident with the system peak, to the sum of peak <br> demands for all classes during the 12 peak months of <br> the year, based on 2007 load research analysis results. |
| Average and Excess | The average and excess allocator combines the class's <br> average demands and non-coincident peak demands, <br> based on 2007 load research analysis results. |
| Energy | The energy allocator represents each class's share of <br> annual energy sold, excluding sales for resale. |
| Customer Allocator | The customer allocator relates the number of customers <br> within each class to the total number of District <br> customers served. |
| Weighted Customer Allocators | The weighted customer allocators adjust the customer <br> allocator by the relative service level required for each <br> customer class. The three weighted customer allocators <br> are for the cost of meters, meter reading and customer <br> service. |
| Other Allocators | Other allocators were developed based on intermediate <br> results of the cost-of-service analysis. |

The District does not have current load research information that could be used to develop the demand allocators described above. Therefore, coincident and noncoincident peak estimates were developed using comparable load factors from utilities similar to the District and data on the system peak and monthly retail energy sales. The methodology and results of this analysis are presented in Appendix E.

For the peak responsibility method, demand-related generation and transmission costs were allocated using the 4 CP allocator as this is representative of variations in the District's expected peak demand requirements. For the average and excess method, these costs were allocated using the average and excess allocator, which combines the class's average demands and non-coincident peak demands. In both analyses, energyrelated production costs were allocated on a per-kilowatt hour basis, demand-related distribution costs were allocated based on 12 NCP allocators, and customer-related costs were assigned to classes of service on the basis of either the customer allocator or one of several weighted customer allocation factors.
The demand, energy and customer allocation factors used in this study are presented in Appendix D. The estimated cost of service for each of the District's main customer
classes using both the peak responsibility method and the average and excess method is summarized in Table 4.

Table 4
Okanogan County PUD Allocated Cost of Service by Customer Class
(TY 2007)

| Demand | Energy | Customer |
| :---: | :---: | :---: | Total | L |
| :--- |

## Peak Responsibility Method

| Residential | $\$ 11,483,919$ | $\$ 8,216,281$ | $\$ 3,565,650$ | $\$ 23,265,850$ |
| :--- | ---: | ---: | ---: | ---: |
| General Service | $7,001,886$ | $5,730,114$ | 630,146 | $13,362,146$ |
| Industrial | $1,168,523$ | $1,695,300$ | 3,483 | $2,867,307$ |
| Irrigation | $1,081,200$ | $1,930,326$ | 98,849 | $3,110,375$ |
| Frost Control | 6,999 | 11,447 | 40,990 | 59,436 |
| Street Lights | 35,163 | 37,065 | 116,292 | 188,521 |
| Total | $\$ 20,777,691$ | $\$ 17,620,533$ | $\$ 4,455,411$ | $\$ 42,853,635$ |

Average and Excess Method

| Residential | $\$ 10,862,289$ | $\$ 8,216,281$ | $\$ 3,565,650$ | $\$ 22,644,220$ |
| :--- | ---: | ---: | ---: | ---: |
| General Service | $6,316,437$ | $5,730,114$ | 630,146 | $12,676,697$ |
| Industrial | $1,147,486$ | $1,695,300$ | 3,483 | $2,846,269$ |
| Irrigation | $2,386,021$ | $1,930,326$ | 98,849 | $4,415,195$ |
| Frost Control | 31,015 | 11,447 | 40,990 | 83,452 |
| Street Lights | 34,443 | 37,065 | 116,292 | 187,801 |
| Total | $\$ 20,777,691$ | $\$ 17,620,533$ | $\$ 4,455,411$ | $\$ 42,853,635$ |

## Summary of Cost-of-Service Analysis Results

In Table 5 below, the District's TY 2007 cost-of-service results are compared to revenues from existing rates by customer class to determine whether rate changes are warranted. Revenues under existing rates are shown in the first column, and the second column provides the allocated cost of service for each customer class. The third column summarizes the amount that revenues from existing rates over or under recover the allocated cost of service. The last column shows the percentage that revenues from current rates would need to be reduced or increased if rates were to be adjusted to reflect cost-of-service levels for each class.

## Table 5 <br> Okanogan County PUD Summary of Cost-of-Service Results <br> (TY 2007)

Peak Responsibility Method

| Customer Class | Adjusted Revenue <br> Under Existing Rates | Allocated <br> Cost of Service | Over (Under) <br> Cost of Service | Percent Change <br> in Revenue |
| :--- | ---: | ---: | ---: | ---: |
|  |  |  |  |  |
| Residential | $\$ 20,352,572$ | $\$ 23,265,850$ | $(\$ 2,913,279)$ | $14.3 \%$ |
| General Service | $15,016,586$ | $13,362,146$ | $1,654,441$ | $-11.0 \%$ |
| Industrial | $3,632,696$ | $2,867,307$ | 765,389 | $-21.1 \%$ |
| Irrigation | $3,632,724$ | $3,110,375$ | 522,349 | $-14.4 \%$ |
| Frost Control | 69,391 | 59,436 | 9,955 | $-14.3 \%$ |
| Street Lights | 149,665 | 188,521 | $(38,856)$ | $26.0 \%$ |
| Total | $\$ 42,853,635$ | $\$ 42,853,635$ | $\$ 0$ | $0.0 \%$ |

Average and Excess Method

| Customer Class | Adjusted Revenue <br> Under Existing Rates | Allocated <br> Cost of Service | Over (Under) <br> Cost of Service | Percent Change <br> in Revenue |
| :--- | ---: | ---: | ---: | ---: |
|  |  |  |  |  |
| Residential | $\$ 20,352,572$ | $\$ 22,644,220$ | $(\$ 2,291,648)$ | $11.3 \%$ |
| General Service | $15,016,586$ | $12,676,697$ | $2,339,889$ | $-15.6 \%$ |
| Industrial | $3,632,696$ | $2,846,269$ | 786,427 | $-21.6 \%$ |
| Irrigation | $3,632,724$ | $4,415,195$ | $(782,471)$ | $21.5 \%$ |
| Frost Control | 69,391 | 83,452 | $(14,061)$ | $20.3 \%$ |
| Street Lights | 149,665 | 187,801 | $(38,136)$ | $25.5 \%$ |
| Total | $\$ 42,853,635$ | $\$ 42,853,635$ | $\$ 0$ | $0.0 \%$ |

Figures 3 and 4 show the percent annual revenue change required for each customer class to reach the cost-of-service level for the peak responsibility and average and excess methods.


Figure 3: Okanogan County PUD TY 2007 Cost-of-Service Results Using Peak Responsibility Method


Figure 4: Okanogan County PUD TY 2007 Cost-of-Service Results Using Average and Excess Method

## Unit Cost Analysis Results

The District's TY 2007 cost-of-service results for each customer class were analyzed in conjunction with the specific test year energy, demand and customer billing determinants to develop unit cost estimates that include energy, demand and customer components. A summary of the unit cost analysis results is shown at the bottom of pages D-1 and D-2 of Appendix D.

## Issues for Additional Consideration

In the course of preparing this cost-of-service analysis for the District, a number of important questions arose regarding issues the District may face in the future that could significantly impact the District's cost of service. Alternative scenarios of the cost-of-service analysis to address these questions were analyzed and presented to the District's Board of Commissioners. Among the issues addressed were the following:

- Alternative allocations of wholesale revenues
- Financial impacts on cost of service from reduced or no wholesale revenues
- Potential impact of a BPA rate increase in the near future

The District may wish to consider the impacts of these and other scenarios that may have an impact on the District's cost of service in its future studies.

## Appendix A <br> DISTRICTS TEST YEAR 2007 REVENUE REQUREMENTS

## Okanogan County PUD

2008 Electric System Cost-of-Service Study
Operating Revenues and Revenue Requirements
Actual 2007 and Adjusted Test Year 2007

| Line |  |  | Adjusted <br> Pro Forma <br> Adjustment <br> Number |
| :--- | ---: | ---: | ---: | ---: |
| No. |  | Pro Forma <br> Adjustments | 2007 |

## Proforma Adjustments:

1 Adjustment of Purchased Power expense accounts for various adjustments in 2007 which resulted in a decrease in BPA Purchased Power costs.

## Appendix B <br> COST-OF-SERVICE ANALYSIS RESULTSFUNCTIONA

| Line | Description | Account | Function Factor | Adjusted <br> Test Year 2007 | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| REVENUE REQUIREMENTS |  |  |  |  |  |  |  |
|  | OPERATING EXPENSES |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 | Miscellaneous Hydraulic Power Expense | 539.00 | Prod | 9,457 | 9,457 | - |  |
|  | Miscellaneous Hydraulic Power Expense - Labor |  | Prod | 503 | 503 | - | - |
| 5 | Miscellaneous Expense - Generation | 549.00 | Prod | 1,399 | 1,399 | - | - |
|  | Miscellaneous Expense - Generation - Labor |  | Prod | 2,974 | 2,974 | - | - |
| 7 | Rental Expense - Generation | 550.00 | Prod | 7,200 | 7,200 | - | - |
| 8 | Purchased Power - Miscellaneous | 555.00 | Prod | 799,913 | 799,913 | - | - |
| 9 | Purchased Power - Bonneville Power | 555.10 | Prod | 0 | - | - | - |
| 10 | BPA Block | 555.10 | Prod | 5,222,612 | 5,222,612 | - | - |
| 11 | BPA Slice | 555.10 | Prod | 11,030,852 | 11,030,852 | - | - |
| 12 | BPA Transmission and Ancillary Services | 555.10 | Prod | 2,073,844 | 2,073,844 | - | - |
| 13 | BPA Irrigation Customer Class Credit | 555.10 | Dist | $(313,175)$ | - | - | $(313,175)$ |
| 14 | Purchased Power - Wells Dam Power | 555.20 | Prod | 2,763,410 | 2,763,410 | - | - |
| 15 | Purchased Power - Nine Canyon Wind | 555.70 | Prod | 2,346,663 | 2,346,663 | - | - |
| 16 | System Control and Load Dispatch | 556.00 | Prod | 200,976 | 200,976 | - | - |
| 17 | Power Supply Expense | 557.00 | Prod | 78,175 | 78,175 | - | - |
| 18 | Power Supply Expense - Labor |  | Prod | 171,833 | 171,833 | - | - |
| 19 | TOTAL POWER COSTS |  |  | 24,396,635 | 24,709,810 | 0 | $(313,175)$ |
| 20 | Operation Supervision and Engineering | 560.00 | Trans | $(22,183)$ | - | $(22,183)$ | - |
| 21 | Operation Supervision and Engineering - Labor |  | Trans | 22,961 | - | 22,961 | - |
| 22 | Overhead Line Expense | 563.00 | Trans | 11,111 | - | 11,111 | - |
| 23 | Overhead Line Expense - Labor |  | Trans | 2,649 | - | 2,649 | - |
| 24 | Rents | 567.00 | Trans | 1,098 | - | 1,098 | - |
| 25 | Maintenance Supervision and Engineering | 568.00 | Trans | 26 | - | 26 | - |
| 26 | Maintenance Supervision and Engineering - Labor |  | Trans | 98 | - | 98 | - |
| 27 | Maintenance of Overhead Lines | 571.00 | Trans | 211,272 | - | 211,272 | - |
| 28 | Maintenance of Overhead Lines - Labor |  | Trans | 5,608 | - | 5,608 | - |
| 29 | TOTAL TRANSMISSION OPERATION |  |  | 232,641 | 0 | 232,641 | 0 |
| 30 | Operation Supervision and Engineering | 580.00 | Dist | 82,737 | - | - | 82,737 |
| 31 | Operation Supervision and Engineering - Labor |  | Dist | 729,331 | - | - | 729,331 |
| 32 | Station Operation Expenses | 582.00 | Dist | 63,129 | - | - | 63,129 |
| 33 | Station Operation Expenses - Labor |  | Dist | 68,878 | - | - | 68,878 |
| 34 | Overhead Line Expenses | 583.00 | Dist | 147,142 | - | - | 147,142 |
| 35 | Overhead Line Expenses - Labor |  | Dist | 303,992 | - | - | 303,992 |
| 36 | Underground Line Expenses | 584.00 | Dist | 29,672 | - | - | 29,672 |
| 37 | Underground Line Expenses - Labor |  | Dist | 57,444 | - | - | 57,444 |
| 38 | Street Lighting/Signal Systems | 585.00 | Dist | 991 | - | - | 991 |
| 39 | Street Lighting/Signal Systems - Labor |  | Dist | 301 | - | - | 301 |
| 40 | Operations Meter Expenses | 586.00 | Dist | 77,434 | - | - | 77,434 |


| Line | Description | Account | Function Factor | Adjusted <br> Test Year 2007 | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| 41 | Operations Meter Expenses - Labor |  | Dist | 325,006 | - | - | 325,006 |
| 42 | Customer Installation Expenses | 587.00 | Dist | 20,194 | - | - | 20,194 |
| 43 | Customer Installation Expenses - Labor |  | Dist | 172,619 | - | - | 172,619 |
| 44 | Miscellaneous Distribution Expenses | 588.00 | Dist | 100,183 | - | - | 100,183 |
| 45 | Miscellaneous Distribution Expenses - Labor |  | Dist | 165,224 | - | - | 165,224 |
| 46 | Operations Internal Telecom | 588.10 | Dist | 41,958 | - | - | 41,958 |
| 47 | Rents | 589.00 | Dist | 18,549 | - | - | 18,549 |
| 48 | Maintenance Supervision and Engineering | 590.00 | Dist | 12,860 | - | - | 12,860 |
| 49 | Maintenance Supervision and Engineering - Labor |  | Dist | 139,583 | - | - | 139,583 |
| 50 | Maintenance of Station Equipment | 592.00 | Dist | 88,362 | - | - | 88,362 |
| 51 | Maintenance of Station Equipment - Labor |  | Dist | 145,164 | - | - | 145,164 |
| 52 | Maintenance of Overhead Lines | 593.00 | Dist | 601,016 | - | - | 601,016 |
| 53 | Maintenance of Overhead Lines - Labor |  | Dist | 283,363 | - | - | 283,363 |
| 54 | Maintenance of Underground Lines | 594.00 | Dist | 37,516 | - | - | 37,516 |
| 55 | Maintenance of Underground Lines - Labor |  | Dist | 48,411 | - | - | 48,411 |
| 56 | Maintenance of Line Transformers | 595.00 | Dist | 18,492 | - | - | 18,492 |
| 57 | Maintenance of Line Transformers - Labor |  | Dist | 85,671 | - | - | 85,671 |
| 58 | Maintenance of Street Lights \& Signal Systems | 596.00 | Dist | 6,434 | - | - | 6,434 |
| 59 | Maintenance of Street Lights \& Signal Systems - Labor |  | Dist | 17,343 | - | - | 17,343 |
| 60 | Maintenance of Meters | 597.00 | Dist | 3,989 | - | - | 3,989 |
| 61 | Operations Miscellaneous Maintenance | 598.00 | Dist | 126 | - | - | 126 |
| 62 | Operations Miscellaneous Maintenance - Labor |  | Dist | 12,263 | - | - | 12,263 |
| 63 | TOTAL DISTRIBUTION OPERATION |  |  | 3,905,379 | 0 | 0 | 3,905,379 |
| 64 | Meter Reading Expenses | 902.00 | Dist | 49,721 | - | - | 49,721 |
| 65 | Meter Reading Expenses - Labor |  | Dist | 235,260 | - | - | 235,260 |
| 66 | Operations - Collections | 903.00 | Dist | 173,378 | - | - | 173,378 |
| 67 | Operations - Collections - Labor |  | Dist | 750,681 | - | - | 750,681 |
| 68 | Uncollectible Accounts | 904.00 | Dist | 46,260 | - | - | 46,260 |
| 69 | Uncollectible Accounts-Con Loan | 904.10 | Dist | 1,168 | - | - | 1,168 |
| 70 | TOTAL CUSTOMER ACCOUNTS |  |  | 1,256,469 | 0 | 0 | 1,256,469 |
| 71 | Revenues from Jobbing \& Contract | 415.00 | Dist | $(40,237)$ | - | - | $(40,237)$ |
| 72 | Revenues from Bulb Sales - (CR) | 415.10 | Dist | $(20,756)$ | - | - | $(20,756)$ |
| 73 | Costs \& Exp. Of Jobbing and Contract | 416.00 | Dist | 31,378 | - | - | 31,378 |
| 74 | Costs \& Exp. Of Jobbing and Contract - Labor |  | Dist | 14,231 | - | - | 14,231 |
| 75 | Purchases for Resale (Bulbs) | 416.10 | Dist | 84,121 | - | - | 84,121 |
| 76 | Customer Assistance Expenses | 908.00 | Dist | 209,680 | - | - | 209,680 |
| 77 | Customer Assistance Expenses - Labor |  | Dist | 129,076 | - | - | 129,076 |
| 78 | Informational and Instructional Ad | 909.00 | Dist | 57,369 | - | - | 57,369 |
| 79 | Informational and Instructional Ad - Labor |  | Dist | 12,499 | - | - | 12,499 |
| 80 | Miscellaneous Customer Service and Information | 910.00 | Dist | 3,217 | - | - | 3,217 |
| 81 | TOTAL CUSTOMER SERVICE AND INFORMATION |  |  | 480,579 | 0 | 0 | 480,579 |


| Line | Description | Account | Function Factor | Adjusted <br> Test Year $2007$ | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| 82 | Administrative \& General Salaries | 920.00 | Labor | $(125,772)$ | $(5,586)$ | $(1,085)$ | $(119,100)$ |
| 83 | Administrative \& General Salaries - Labor |  | Labor | 1,355,160 | 60,190 | 11,695 | 1,283,274 |
| 84 | Office Supplies \& Expenses | 921.00 | Labor | 131,900 | 5,858 | 1,138 | 124,903 |
| 85 | Outside Services Employed | 923.00 | Labor | 89,650 | 3,982 | 774 | 84,894 |
| 86 | Property Insurance | 924.00 | Gross Plant | 71,217 | 602 | 3,709 | 66,905 |
| 87 | Injuries and Damages | 925.00 | Labor | 150,153 | 6,669 | 1,296 | 142,188 |
| 88 | Injuries and Damages - Labor |  | Labor | 11,769 | 523 | 102 | 11,145 |
| 89 | Employee Pensions and Benefits | 926.00 | Labor | $(1,135,726)$ | $(50,444)$ | $(9,801)$ | $(1,075,481)$ |
| 90 | Employee Pensions and Benefits - Labor |  | Labor | 54,902 | 2,439 | 474 | 51,990 |
| 91 | Supplemental Leave Balance | 926.10 | Labor | 1,110 | 49 | 10 | 1,051 |
| 92 | Short Term Disability | 926.30 | Labor | 18,497 | 822 | 160 | 17,516 |
| 93 | Employer Contributions for 401(A) | 926.40 | Labor | 99,765 | 4,431 | 861 | 94,473 |
| 94 | Employer Contributions for HRA V | 926.45 | Labor | 76,848 | 3,413 | 663 | 72,771 |
| 95 | Pensions and Benefits - CWPU Trust | 926.50 | Labor | 967,349 | 42,965 | 8,348 | 916,035 |
| 96 | Miscellaneous General Exp Boc | 930.00 | Labor | 282,673 | 12,555 | 2,439 | 267,678 |
| 97 | Miscellaneous General Exp Boc - Labor |  | Labor | 100,691 | 4,472 | 869 | 95,349 |
| 98 | Rents - G\&A | 931.00 | Labor | 17,354 | 771 | 150 | 16,434 |
| 99 | Maintenance of General Plant | 935.00 | Gen Plant | 129,684 | 1,097 | 6,755 | 121,833 |
| 100 | Maintenance of General Plant - Labor |  | Gen Plant | 54,421 | 460 | 2,835 | 51,126 |
| 101 | TOTAL ADMINISTRATIVE AND GENERAL |  |  | 2,351,643 | 95,269 | 31,390 | 2,224,985 |
| 102 | Depreciation Expense - Production |  | Prod | 0 | - | - | - |
| 103 | Depreciation Expense - Transmission | 403.10 | Trans | 71,178 | - | 71,178 | - |
| 104 | Depreciation Expense - Distribution | 403.30 | Dist | 1,911,540 | - | - | 1,911,540 |
| 105 | Depreciation Expense - General | 403.40 | Gen Plant | 523,903 | 4,430 | 27,288 | 492,185 |
| 106 | Amortization Expense - Acquisition Adj | 406.00 | Trans | 28,425 | - | 28,425 | - |
| 107 | TOTAL DEPRECIATION AND AMORTIZATION |  |  | 2,535,046 | 4,430 | 126,891 | 2,403,725 |
| 108 | State Utility Tax | 408.11 | Rev Less Wholesale | 1,214,259 | 559,412 | 55,955 | 598,891 |
| 109 | State Privilege Tax | 408.12 | Rev Less Wholesale | 640,889 | 295,259 | 29,533 | 316,096 |
| 110 | Retailing and Wholesaling Tax | 408.13 | Rev Less Wholesale | 415 | 191 | 19 | 205 |
| 111 | Service Tax (Carrying Charges) | 408.16 | Rev Less Wholesale | 24,744 | 11,400 | 1,140 | 12,204 |
| 112 | Unemployment Compensating Tax | 408.21 | Labor | 10,946 | 486 | 94 | 10,365 |
| 113 | State Industrial and Medical Tax | 408.23 | Labor | (9) | (0) | (0) | (9) |
| 114 | Leasehold Tax | 408.80 | Rev Less Wholesale | 592 | 273 | 27 | 292 |
| 115 | TOTAL TAXES |  |  | 1,891,836 | 867,021 | 86,770 | 938,045 |
| 116 | TOTAL OPERATING EXPENSES |  |  | 37,050,227 | 25,676,530 | 477,692 | 10,896,006 |
| 117 | Check |  |  |  |  |  |  |
| 118 | FIXED CHARGES |  |  |  |  |  |  |
| 119 |  |  |  |  |  |  |  |
| 120 | Interest on Long Term Debt - 200 | 427.60 | Net Plant | 327,675 | 23,889 | 39,740 | 264,046 |
| 121 | Interest on Long Term Debt - 200 | 427.70 | Net Plant | 450,664 | 32,856 | 54,656 | 363,152 |


| Line | Description | Account | Function Factor | Adjusted <br> Test Year 2007 | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| 122 | Loss on Reacquired Debt - 2001 N | 428.50 | Net Plant | 24,919 | 1,817 | 3,022 | 20,080 |
| 123 | Debt Issuance Expense and Discount | 428.60 | Net Plant | 9,327 | 680 | 1,131 | 7,516 |
| 124 | Debt Issuance Expense and Discount | 428.70 | Net Plant | 13,828 | 1,008 | 1,677 | 11,143 |
| 125 | TOTAL INTEREST ON LONG TERM DEBT |  |  | 826,412 | 60,249 | 100,226 | 665,937 |
| 126 | NET OPERATING MARGIN |  |  | 5,667,769 | n/a | n/a | n/a |
| 127 | Check |  |  | 0 |  |  |  |
| 128 | INTEREST INCOME |  |  |  |  |  |  |
| 129 |  |  |  |  |  |  |  |
| 130 | Interest Income | 419.00 | Net Plant | 1,919,001 | 139,905 | 232,734 | 1,546,363 |
| 131 | Interest Income - Interdivisional | 419.10 | Net Plant | 253,378 | 18,472 | 30,729 | 204,176 |
| 132 | Gain or Loss on Disposition of Property | 421.10 | Net Plant | $(3,779)$ | (275) | (458) | $(3,045)$ |
| 133 | TOTAL INTEREST INCOME |  |  | 2,168,599 | 158,101 | 263,005 | 1,747,493 |
| 134 | CONTRIBUTIONS AND DONATIONS |  |  |  |  |  |  |
| 135 |  |  |  |  |  |  |  |
| $\begin{aligned} & 136 \\ & 137 \end{aligned}$ | Contributions in Aid of ConstructionTOTAL CONTRIBUTIONS AND DONATIONS | 422.00 | Dist | 1,934,560 | - | - | 1,934,560 |
|  |  |  |  | 1,934,560 | 0 | 0 | 1,934,560 |
| 138 | Margins or Increase in Net Assets |  | TIER | 9,770,928 | 712,348 | 1,185,004 | 7,873,576 |
| 139 | Operating Revenue Requirement |  |  | 47,647,568 | 26,449,128 | 1,762,921 | 19,435,518 |
| 140 | Less Contributions in Aid of Construction |  | Dist | 1,934,560 | - | - | 1,934,560 |
| 141 | Less Non-Operating Revenue |  | RateBs | 2,168,599 | 158,101 | 263,005 | 1,747,493 |
| 142 | Less Other Electric Revenues |  |  | 690,773 | 82,280 | 77,640 | 530,853 |
| 143 | Revenue Requirement from Rates |  |  | 42,853,635 | 26,208,747 | 1,422,276 | 15,222,612 |
| 144 | Wholesale Revenues <br> Revenue Requirement from Retail Rates |  | Prod | $(11,989,607)$ | $(11,989,607)$ | - | - |
| 145 |  |  | 30,864,028 | 14,219,140 | 1,422,276 | 15,222,612 |
| 146 | OPERATING TIER |  |  |  |  |  |  |  |
| 147 | Including Wholesale Revenues |  |  | 10.20 | 10.20 | 10.20 | 10.20 |
| 148 | Excluding Wholesale Revenues |  |  |  |  |  |  |
| 149 | TOTAL TIER |  |  |  |  |  |  |
| 150 | Including Wholesale Revenues |  |  | 12.82 | 12.82 | 12.82 | 12.82 |
| 151 | Excluding Wholesale Revenues |  |  |  |  |  |  |
| RATE BASE |  |  |  |  |  |  |  |
| 152 | Organization - Intangible Plant | 301.00 | Gr PTD Plant | 28,685 | 243 | 1,494 | 26,949 |
| 153 | Misc Intangible Plant | 303.00 | Gr PTD Plant | 63,612 | 538 | 3,313 | 59,761 |
| 154 | TOTAL INTANGIBLE PLANT |  |  | 92,297 | 780 | 4,807 | 86,709 |


| Line | Description | Account | Function Factor | Adjusted <br> Test Year 2007 | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| 155 | Land and Land Rights | 310.00 | Prod | - | - |  |  |
| 156 | Structures and Improvements | 311.00 | Prod | - | - | - | - |
| 157 | Boiler Plant Equipment | 312.00 | Prod | - | - | - | - |
| 158 | Engines and Engine Driven Generators | 313.00 | Prod | - | - | - | - |
| 159 | Turbogenerator Units | 314.00 | Prod | - | - | - | - |
| 160 | Accessory Electric Equipment | 315.00 | Prod | - | - | - | - |
| 161 | Miscellaneous Power Plant Equipment | 316.00 | Prod | - | - | - | - |
| 162 | Land and Land Rights | 330.00 | Prod | 8,145 | 8,145 | - | - |
| 163 | Structures \& Improvements | 331.00 | Prod | 106,196 | 106,196 | - |  |
| 164 | Reservoirs, Dams, \& Waterways | 332.00 | Prod | 271,978 | 271,978 | - | - |
| 165 | Water Wheels, Turbines, \& Generators | 333.00 | Prod | 161,950 | 161,950 | - | - |
| 166 | Accessory Electric Equipment | 334.00 | Prod | 19,418 | 19,418 | - |  |
| 167 | Misc Power Plant Equipment | 335.00 | Prod | 20,707 | 20,707 | - |  |
| 168 | TOTAL HYDROELECTRIC PLANT |  |  | 588,393 | 588,393 | 0 | 0 |
| 169 | Land and Land Rights | 350.00 | Trans | 152,482 | - | 152,482 | - |
| 170 | Structures and Improvements | 352.00 | Trans | - | - | - | - |
| 171 | Station Equipment | 353.00 | Trans | - | - | - | - |
| 172 | Towers and Fixtures | 354.00 | Trans | 109,867 | - | 109,867 | - |
| 173 | Poles and Fixtures | 355.00 | Trans | 1,413,644 | - | 1,413,644 | - |
| 174 | Overhead Conductors and Devices | 356.00 | Trans | 1,948,471 | - | 1,948,471 | - |
| 175 | Underground Conduits-Trans | 357.00 | Trans | - | - | - | - |
| 176 | UG Conductors \& Devices-Trans | 358.00 | Trans | - | - | - | - |
| 177 | TOTAL TRANSMISSION PLANT |  |  | 3,624,464 | 0 | 3,624,464 | 0 |
| 178 | Land and Land Rights | 360.00 | Dist | 241,561 | - | - | 241,561 |
| 179 | Structures and Improvements | 361.00 | Dist | 461,629 | - | - | 461,629 |
| 180 | Station Equipment | 362.00 | Dist | 11,749,156 | - | - | 11,749,156 |
| 181 | Poles, Towers, and Fixtures | 364.00 | Dist | 13,497,531 | - | - | 13,497,531 |
| 182 | Overhead Conductors and Devices | 365.00 | Dist | 10,678,720 | - | - | 10,678,720 |
| 183 | Underground Conduit | 366.00 | Dist | 2,743,656 | - | - | 2,743,656 |
| 184 | Underground Conductors and Devices | 367.00 | Dist | 6,041,553 | - | - | 6,041,553 |
| 185 | Line Transformers | 368.00 | Dist | 11,029,452 | - | - | 11,029,452 |
| 186 | Services | 369.00 | Dist | 6,275,436 | - | - | 6,275,436 |
| 187 | Meters | 370.00 | Dist | 1,982,323 | - | - | 1,982,323 |
| 188 | Installations on Customer's Premises | 371.00 | Dist | 154,761 | - | - | 154,761 |
| 189 | Leased Property | 372.00 | Dist | - | - | - | - |
| 190 | Street Lighting and Signal Systems | 373.00 | Dist | 517,407 | - | - | 517,407 |
| 191 | TOTAL DISTRIBUTION PLANT |  |  | 65,373,184 | 0 | 0 | 65,373,184 |
| 192 | Land and Land Rights | 389.00 | Gr PTD Plant | 275,880 | 2,333 | 14,369 | 259,177 |
| 193 | Structures and Improvements | 390.00 | Gr PTD Plant | 3,750,394 | 31,712 | 195,343 | 3,523,339 |
| 194 | Office Furniture \& Equipment - General | 391.00 | Gr PTD Plant | 1,431,136 | 12,101 | 74,542 | 1,344,493 |
| 195 | Computer Equipment | 391.00 | Gr PTD Plant | - | - | - | - |


| Line | Description | Account | Function Factor | Adjusted <br> Test Year 2007 | Function |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Production | Transmission | Distribution |
| 196 | Transportation Equipment | 392.00 | Gr PTD Plant | 3,548,902 | 30,008 | 184,848 | 3,334,045 |
| 197 | Stores Equipment | 393.00 | Gr PTD Plant | 66,713 | 564 | 3,475 | 62,674 |
| 198 | Tools, Shop, and Garage Equip | 394.00 | Gr PTD Plant | 899,308 | 7,604 | 46,841 | 844,862 |
| 199 | Laboratory Equipment | 395.00 | Gr PTD Plant | 294,260 | 2,488 | 15,327 | 276,445 |
| 200 | Power Operated Equipment | 396.00 | Gr PTD Plant | 620,718 | 5,249 | 32,331 | 583,139 |
| 201 | Communication Equipment | 397.00 | Gr PTD Plant | 3,983,256 | 33,681 | 207,472 | 3,742,103 |
| 202 | Miscellaneous Equipment | 398.00 | Gr PTD Plant | 51,100 | 432 | 2,662 | 48,006 |
| 203 | Other Tangible Property - General | 399.00 | Gr PTD Plant | 27 | 0 | 1 | 25 |
| 204 | TOTAL GENERAL PLANT |  |  | 14,921,695 | 126,172 | 777,213 | 14,018,310 |
| 205 | SUBTOTAL ELECTRIC PLANT IN SERVICE |  |  | 84,600,033 | 715,346 | 4,406,484 | 79,478,203 |
| 206 | Construction Work in Progress |  | CWIP | 13,843,320 | 3,705,659 | 4,531,666 | 5,605,995 |
| 207 | TOTAL ELECTRIC PLANT |  |  | 98,443,353 | 4,421,004 | 8,938,150 | 85,084,198 |
| 208 | Working Capital |  |  |  |  |  |  |
| 209 | O\&M |  | O\&M L | 2,157,716 | 236,587 | 78,525 | 1,842,605 |
| 210 | Fuel \& Purchased Power |  | Prod | 2,949,549 | 2,949,549 | - | - |
| 211 | Materials \& Supplies |  | Net Plant | 2,959,865 | 215,789 | 358,968 | 2,385,108 |
| 212 | Prepayments |  | Net Plant | 17,363 | 1,266 | 2,106 | 13,991 |
| 213 | Prepayments |  | Net Plant | 845,833 | 61,665 | 102,581 | 681,586 |
| 214 | SUBTOTAL WORKING CAPITAL |  |  | 8,930,326 | 3,464,855 | 542,180 | 4,923,290 |
| 215 | Less Accumulated Depreciation | 1080.00 |  |  |  |  |  |
| 216 | Production |  | Prod | $(568,707)$ | $(568,707)$ | - | - |
| 217 | Transmission |  | Trans | $(2,242,701)$ | - | $(2,242,701)$ | - |
| 218 | Distribution |  | Dist | $(36,116,774)$ | - | - | $(36,116,774)$ |
| 219 | General |  | Gen Plant | $(7,413,789)$ | $(62,688)$ | $(386,155)$ | $(6,964,945)$ |
| 220 | Accum Depr Manual | 1080.00 | Blank | 0 | - | - | - |
| 221 | Retirements Work in Progress (RWIP) | 1088.00 | Gross Plant | $(137,094)$ | $(1,159)$ | $(7,141)$ | $(128,794)$ |
| 222 | Loss Due to Retirement | 1089.00 | Blank | 0 | - | - | - |
| 223 | Accum Provision for Amortization | 1150.00 | Blank | 0 | - | - | - |
| 224 | TOTAL ACCUMULATED DEPRECIATION AND AMORTIZATION |  |  | $(46,479,064)$ | $(632,554)$ | (2,635,997) | $(43,210,513)$ |
| 225 | NET RATE BASE |  |  | 60,894,614 | 7,253,306 | 6,844,333 | 46,796,975 |


| Line | Function Factor | Factor | Production | Transmission | Distribution | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | Production direct | 1 | 0 | 0 | 1 |  |
| 2 | Prod | Production Factor | 100.0\% | 0.0\% | 0.0\% | 100.0\% |  |
| 3 |  |  |  |  |  |  |  |
| 4 |  | Transmission direct | 0 | 1 | 0 | 1 |  |
| 5 | Trans | Transmission Factor | 0.0\% | 100.0\% | 0.0\% | 100.0\% |  |
| 6 |  |  |  |  |  |  |  |
| 7 |  | Distribution direct | 0 | 0 | 1 | 1 |  |
| 8 | Dist | Distribution Factor | 0.0\% | 0.0\% | 100.0\% | 100.0\% |  |
| 9 |  |  |  |  |  |  |  |
| 10 |  | O\&M less Fuel \& Purchased Power | 1,439,236 | 477,692 | 11,209,181 | 13,126,109 |  |
| 11 | O\&M L | O\&ML Factor | 11.0\% | 3.6\% | 85.4\% | 100.0\% |  |
| 12 |  |  |  |  |  |  |  |
| 13 |  | Labor less A\&G Labor | 243,394 | 47,291 | 5,189,226 | 5,479,910 |  |
| 14 | Labor | Labor Factor | 4.4\% | 0.9\% | 94.7\% | 100.0\% |  |
| 15 |  |  |  |  |  |  |  |
| 16 |  | Rate Base | 7,253,306 | 6,844,333 | 46,796,975 | 60,894,614 |  |
| 17 | RateBs | Rate base Factor | 11.9\% | 11.2\% | 76.8\% | 100.0\% |  |
| 18 |  |  |  |  |  |  |  |
| 19 |  | Revenue Requirement | 26,208,747 | 1,422,276 | 15,222,612 | 42,853,635 |  |
| 20 | RevReqt | Revenue Requirement Factor | 61.2\% | 3.3\% | 35.5\% | 100.0\% |  |
| 21 |  |  |  |  |  |  |  |
| 22 |  | Wholesale Revenues | $(11,989,607)$ | - | - | $(11,989,607)$ |  |
| 23 | Wholesale | Wholesale Revenues Factor | 100.0\% | 0.0\% | 0.0\% | 100.0\% |  |
| 24 |  |  |  |  |  |  |  |
| 25 |  | Rev Reqt Less Wholesale Revenues | 14,219,140 | 1,422,276 | 15,222,612 | 30,864,028 |  |
| 26 | Rev Less Wholesale | Revenue Requirement Less Wholesale Revenue Factor | $46.1 \%$ | 4.6\% | $49.3 \%$ | $100.0 \%$ |  |
| 27 |  |  |  |  |  |  |  |
| 28 |  | Gross P, T, D Plant | 588,393 | 3,624,464 | 65,373,184 | 69,586,042 |  |
| 29 | Gr PTD Plant | Gross P, T, D Plant Factor | 0.8\% | 5.2\% | 93.9\% | 100.0\% |  |
| 30 |  |  |  |  |  |  |  |
| 31 |  | Net Plant | 3,788,450 | 6,302,153 | 41,873,685 | 51,964,288 |  |
| 32 | Net Plant | Net plant Factor | 7.3\% | 12.1\% | 80.6\% | 100.0\% |  |
| 33 |  |  |  |  |  |  |  |
| 34 |  | Gross Plant | 715,346 | 4,406,484 | 79,478,203 | 84,600,033 |  |
| 35 | Gross Plant | Gross plant Factor | 0.8\% | 5.2\% | 93.9\% | 100.0\% |  |
| 36 |  |  |  |  |  |  |  |
| 37 |  | General Plant | 126,172 | 777,213 | 14,018,310 | 14,921,695 |  |
| 38 | Gen Plant | General plant Factor | 0.8\% | 5.2\% | 93.9\% | 100.0\% |  |
| 39 |  |  |  |  |  |  |  |
| 40 |  | Operating Revenues | $26,291,026$ | 1,499,917 | 17,688,025 |  |  |
| 41 | Ops Revs | Operating Revenues Factor | $57.8 \%$ | $3.3 \%$ | $38.9 \%$ | $100.0 \%$ |  |
| 42 |  |  |  |  |  |  |  |
| 43 |  | CWIP | 3,886,859 | 4,753,256 | 5,880,118 | 14,520,233 |  |
| 44 | CWIP | Construction Work in Progress | 26.8\% | 32.7\% | 40.5\% | 100.0\% |  |
| 45 |  |  |  |  |  |  |  |
| 46 |  | TIER | 712,348 | 1,185,004 | 7,873,576 | 9,770,928 |  |
| 47 | TIER | TIER Factor | 7.3\% | 12.1\% | 80.6\% | 100.0\% |  |
| 48 |  |  |  |  |  |  |  |
| 49 | Blank | Blank | 0 | 0 | 0 | 0 |  |
| 50 |  | Blank Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% |  |
|  |  |  |  |  |  | Okanogan Fina Functiona | COS Study.xls alization Factors |
| c. |  | B-7 |  |  |  |  | 5/8/2009 |

## Appendix C COST-OF-SERMCE ANALYSIS RESULTSCLASSIFCATION



| Line | Description | Account | Classification Factor | Adjusted$\begin{gathered} \text { Test Year } \\ \hline 2007 \end{gathered}$ | Production |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Energy |  | Demand |  | Customer |
| 41 | Operations Meter Expenses - Labor |  | Blank | - |  | - |  | - | - |
| 42 | Customer Installation Expenses | 587.00 | Blank | - |  | - |  | - | - |
| 43 | Customer Installation Expenses - Labor |  | Blank | - |  | - |  | - | - |
| 44 | Miscellaneous Distribution Expenses | 588.00 | Blank | - |  | - |  | - | - |
| 45 | Miscellaneous Distribution Expenses - Labor |  | Blank | - |  | - |  | - | - |
| 46 | Operations Internal Telecom | 588.10 | Blank | - |  | - |  | - | - |
| 47 | Rents | 589.00 | Blank | - |  | - |  | - | - |
| 48 | Maintenance Supervision and Engineering | 590.00 | Blank | - |  | - |  | - | - |
| 49 | Maintenance Supervision and Engineering - Labor |  | Blank | - |  | - |  | - | - |
| 50 | Maintenance of Station Equipment | 592.00 | Blank | - |  | - |  | - | - |
| 51 | Maintenance of Station Equipment - Labor |  | Blank | - |  | - |  | - | - |
| 52 | Maintenance of Overhead Lines | 593.00 | Blank | - |  | - |  | - | - |
| 53 | Maintenance of Overhead Lines - Labor |  | Blank | - |  | - |  | - | - |
| 54 | Maintenance of Underground Lines | 594.00 | Blank | - |  | - |  | - | - |
| 55 | Maintenance of Underground Lines - Labor |  | Blank | - |  | - |  | - | - |
| 56 | Maintenance of Line Transformers | 595.00 | Blank | - |  | - |  | - | - |
| 57 | Maintenance of Line Transformers - Labor |  | Blank | - |  | - |  | - | - |
| 58 | Maintenance of Street Lights \& Signal Systems | 596.00 | Blank | - |  | - |  | - | - |
| 59 | Maintenance of Street Lights \& Signal Systems - Labor |  | Blank | - |  | - |  | - | - |
| 60 | Maintenance of Meters | 597.00 | Blank | - |  | - |  | - | - |
| 61 | Operations Miscellaneous Maintenance | 598.00 | Blank | - |  | - |  | - | - |
| 62 | Operations Miscellaneous Maintenance - Labor |  | Blank | - |  | - |  | - | - |
| 63 | TOTAL DISTRIBUTION OPERATION |  |  | - |  | - |  | - | - |
| 64 | Meter Reading Expenses | 902.00 | Blank | - |  | - |  | - | - |
| 65 | Meter Reading Expenses - Labor |  | Blank | - |  | - |  | - | - |
| 66 | Operations - Collections | 903.00 | Blank | - |  | - |  | - | - |
| 67 | Operations - Collections - Labor |  | Blank | - |  | - |  | - | - |
| 68 | Uncollectible Accounts | 904.00 | Blank | - |  | - |  | - | - |
| 69 | Uncollectible Accounts-Con Loan | 904.10 | Blank | - |  | - |  | - | - |
| 70 | TOTAL CUSTOMER ACCOUNTS |  |  | - |  | - |  | - | - |
| 71 | Revenues from Jobbing \& Contract | 415.00 | Blank | - |  | - |  | - | - |
| 72 | Revenues from Bulb Sales - (CR) | 415.10 | Blank | - |  | - |  | - | - |
| 73 | Costs \& Exp. Of Jobbing and Contract | 416.00 | Blank | - |  | - |  | - | - |
| 74 | Costs \& Exp. Of Jobbing and Contract - Labor |  | Blank | - |  | - |  | - | - |
| 75 | Purchases for Resale (Bulbs) | 416.10 | Blank | - |  | - |  | - | - |
| 76 | Customer Assistance Expenses | 908.00 | Blank | - |  | - |  | - | - |
| 77 | Customer Assistance Expenses - Labor |  | Blank | - |  | - |  | - | - |
| 78 | Informational and Instructional Ad | 909.00 | Blank | - |  | - |  | - | - |
| 79 | Informational and Instructional Ad - Labor |  | Blank | - |  | - |  | - | - |
| 80 | Miscellaneous Customer Service and Information | 910.00 | Blank | - |  | - |  | - | - |
| 81 | TOTAL CUSTOMER SERVICE AND INFORMATION |  |  | - |  | - |  | - | - |



Adjusted Test Year 2007


Okanogan County PUD
2008 Electric System Cost-of-Service Study
Classification of Production Expenses
Adjusted Test Year 2007


Okanogan Final COS Study.xls

Okanogan County PUD
2008 Electric System Cost-of-Service Study
Classification of Production Expenses
Adjusted Test Year 2007

| Line | Description | Account | Classification Factor | Adjusted <br> Test Year 2007 | Production |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Energy | Demand | Customer |
| 195 | Computer Equipment | 391.00 | Gross Plant | - | - | - | - |
| 196 | Transportation Equipment | 392.00 | Gross Plant | 30,008 | - | 30,008 | - |
| 197 | Stores Equipment | 393.00 | Gross Plant | 564 | - | 564 | - |
| 198 | Tools, Shop, and Garage Equip | 394.00 | Gross Plant | 7,604 | - | 7,604 | - |
| 199 | Laboratory Equipment | 395.00 | Gross Plant | 2,488 | - | 2,488 | - |
| 200 | Power Operated Equipment | 396.00 | Gross Plant | 5,249 | - | 5,249 | - |
| 201 | Communication Equipment | 397.00 | Gross Plant | 33,681 | - | 33,681 | - |
| 202 | Miscellaneous Equipment | 398.00 | Gross Plant | 432 | - | 432 | - |
| 203 | Other Tangible Property - General | 399.00 | Gross Plant | 0 | - | 0 | - |
| 204 | TOTAL GENERAL PLANT |  |  | 126,172 | - | 126,172 | - |
| 205 | SUBTOTAL ELECTRIC PLANT IN SERVICE |  |  | 715,346 | - | 715,346 | - |
| 206 | Construction Work in Progress |  | Demand | 3,705,659 | - | 3,705,659 | - |
| 207 | TOTAL ELECTRIC PLANT |  |  | 4,421,004 | 0 | 4,421,004 | 0 |
| 208 | Working Capital |  |  |  |  |  |  |
| 209 | O\&M |  | O\&M L F\&PP | 236,587 | 151,716 | 84,871 | - |
| 210 | Fuel \& Purchased Pow |  | Demand | 2,949,549 | - | 2,949,549 | - |
| 211 | Materials \& Supplies |  | Net Plant | 215,789 | - | 215,789 | - |
| 212 | Prepayments |  | Net Plant | 1,266 | - | 1,266 | - |
| 213 | Deferred Debits |  | Net Plant | 61,665 | - | 61,665 | - |
| 214 | SUBTOTAL WORKING CAPITAL |  |  | 3,464,855 | 151,716 | 3,313,140 | - |
| 215 | Less Accumulated Depreciation | 1080.00 |  |  |  |  |  |
| 216 | Production |  | Demand | $(568,707)$ | - | $(568,707)$ | - |
| 217 | Transmission |  | Blank | - | - | - | - |
| 218 | Distribution |  | Blank | - | - | - | - |
| 219 | General |  | Demand | $(62,688)$ | - | $(62,688)$ | - |
| 220 | Accum Depr Manual | 1080.00 | Blank | - | - | - | - |
| 221 | RWIP | 1088.00 | Demand | $(1,159)$ | - | $(1,159)$ | - |
| 222 | Loss Due to Retirement | 1089.00 | Blank | - | - | - | - |
| 223 | Accum Provision for Amortization | 1150.00 | Blank | - | - | - | - |
| 224 | TOTAL ACCUMULATED DEPRECIATION AND AMORTIZATION |  |  | $(632,554)$ | - | $(632,554)$ | - |
| 225 | NET RATE BASE |  |  | 7,253,306 | 151,716 | 7,101,590 | 0 |


| Line | Production Factor | Factor | Product |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Energy | Demand | Customer |  |  |  | Total |  |
| 0 | Blank |  | - | - | - | - | - | - | - | - |
| 1 |  | Energy | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 2 | Energy | Energy Factor | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 3 |  |  |  |  |  |  |  |  |  |  |
| 4 |  | Demand | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 5 | Demand | Demand Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 6 |  |  |  |  |  |  |  |  |  |  |
| 7 |  | BPA Slice | 73.4\% | 26.6\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 8 | BPA Slice | BPA Slice Factor | 73.4\% | 26.6\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 9 |  |  |  |  |  |  |  |  |  |  |
| 10 |  | BPA Block | 75.0\% | 25.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 11 | BPA Block | BPA Block Factor | 75.0\% | 25.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 12 |  |  |  |  |  |  |  |  |  |  |
| 13 |  | Wells | 67.1\% | 32.9\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 14 | Wells | Wells Factor | 67.1\% | 32.9\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 15 |  |  |  |  |  |  |  |  |  |  |
| 16 |  | Nine Canyon Wind | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 17 | Nine Canyon Wind | Nine Canyon Wind Factor | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 18 |  |  |  |  |  |  |  |  |  |  |
| 19 |  | Weighted Average - All Resources | 76.3\% | 23.7\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 20 | All Resources | All Resources Factor | 76.3\% | 23.7\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 21 |  |  |  |  |  |  |  |  |  |  |
| 22 |  | O\&M less Fuel \& Purch Power | 12,675,658 | 7,090,886 | - | - | - | - | - | 19,766,544 |
| 23 | O\&M L F\&PP | O\&M less Fuel \& Purch Power Factor | 64.1\% | 35.9\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 24 |  |  |  |  |  |  |  |  |  |  |
| 25 |  | Labor less A\&G Labor | - | 175,310 | - | - | - | - | - | 175,310 |
| 26 | Labor less A\&G | Labor less A\&G Labor Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 27 |  |  |  |  |  |  |  |  |  |  |
| 28 |  | A\&G Labor | - | 67,624 | - | - | - | - | - | 67,624 |
| 29 | A\&G Labor | A\&G Labor Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 30 |  |  |  |  |  |  |  |  |  |  |
| 31 |  | Purchased Power | 5,000,193 | 909,793 | - | - | - | - | - | 5,909,986 |
| 32 | Purch Pwr | Purchased Power Factor | 84.6\% | 15.4\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 33 |  |  |  |  |  |  |  |  |  |  |
| 34 |  | Rate Base | 151,716 | 7,101,590 | - | - | - | - | - | 7,253,306 |
| 35 | RateBs | Rate Base Factor | 2.1\% | 97.9\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 36 |  |  |  |  |  |  |  |  |  |  |
| 37 |  | Fuel \& Purchased Power | 5,000,193 | 909,793 | - | - | - | - | - | 5,909,986 |
| 38 | Fuel \& PP | Fuel \& purchased power Factor | 84.6\% | 15.4\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 39 |  |  |  |  |  |  |  |  |  |  |
| 40 |  | Revenue Requirement | 17,620,533 | 8,588,213 | - | - | - | - | - | 26,208,747 |
| 41 | RevReqt | Revenue Requirement Factor | 67.2\% | 32.8\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 42 |  |  |  |  |  |  |  |  |  |  |
| 43 |  | Production Plant | - | 588,393 | - | - | - | - | - | 588,393 |
| 44 | PrPlt | Production Plant Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 45 |  |  |  |  |  |  |  |  |  |  |
| 46 |  | Gross Plant | - | 4,421,004 | - | - | - | - | - | 4,421,004 |
| 47 | Gross Plant | Gross Plant Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 48 |  |  |  |  |  |  |  |  |  |  |
| 49 |  | General Plant | - | 126,172 | - | - | - | - | - | 126,172 |
| 50 | Gen Plant | General Plant Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 51 |  |  |  |  |  |  |  |  |  |  |
| 52 |  | Net Plant | - | 3,788,450 | - | - | - | - | - | 3,788,450 |
| 53 | Net Plant | Net Plant Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |



Classification of Transmission Expenses
Adjusted Test Year 2007


| Line | Description | Account | Classification Factor | $\begin{gathered} \begin{array}{c} \text { Adjusted } \\ \text { Test Year } \end{array} \\ \hline 2007 \\ \hline \end{gathered}$ | Transmission |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Energy |  | Demand | Customer |  |
| 82 | Administrative \& General Salaries | 920.00 | Demand | $(1,085)$ |  |  | $(1,085)$ |  | - |
| 83 | Administrative \& General Salaries - Labor |  | Demand | 11,695 |  | - | 11,695 |  | - |
| 84 | Office Supplies \& Expenses | 921.00 | Demand | 1,138 |  | - | 1,138 |  | - |
| 85 | Outside Services Employed | 923.00 | Demand | 774 |  | - | 774 |  | - |
| 86 | Property Insurance | 924.00 | Gross Plant | 3,709 |  | - | 3,709 |  | - |
| 87 | Injuries and Damages | 925.00 | Demand | 1,296 |  | - | 1,296 |  | - |
| 88 | Injuries and Damages - Labor |  | Demand | 102 |  | - | 102 |  | - |
| 89 | Employee Pensions and Benefits | 926.00 | Demand | $(9,801)$ |  | - | $(9,801)$ |  | - |
| 90 | Employee Pensions and Benefits - Labor |  | Demand | 474 |  | - | 474 |  | - |
| 91 | Supplemental Leave Balance | 926.10 | Demand | 10 |  | - | 10 |  | - |
| 92 | Short Term Disability | 926.30 | Demand | 160 |  | - | 160 |  | - |
| 93 | Employer Contributions for 401(A) | 926.40 | Demand | 861 |  | - | 861 |  | - |
| 94 | Employer Contributions for HRA V | 926.45 | Demand | 663 |  | - | 663 |  | - |
| 95 | Pensions and Benefits - CWPU Trust | 926.50 | Demand | 8,348 |  | - | 8,348 |  |  |
| 96 | Miscellaneous General Exp Boc | 930.00 | Demand | 2,439 |  | - | 2,439 |  | - |
| 97 | Miscellaneous General Exp Boc - Labor |  | Demand | 869 |  | - | 869 |  | - |
| 98 | Rents - G\&A | 931.00 | Demand | 150 |  | - | 150 |  | - |
| 99 | Maintenance of General Plant | 935.00 | Demand | 6,755 |  | - | 6,755 |  | - |
| 100 | Maintenance of General Plant - Labor |  | Demand | 2,835 |  | - | 2,835 |  | - |
| 101 | TOTAL ADMINISTRATIVE AND GENERAL |  |  | 31,390 |  | - | 31,390 |  | - |
| 102 | Depreciation Expense - Production |  | Blank | - |  | - | - |  | - |
| 103 | Depreciation Expense - Transmission | 403.10 | Demand | 71,178 |  | - | 71,178 |  | - |
| 104 | Depreciation Expense - Distribution | 403.30 | Blank | - |  | - | - |  | - |
| 105 | Depreciation Expense - General | 403.40 | Demand | 27,288 |  | - | 27,288 |  | - |
| 106 | Amortization Expense - Acquisition Adj | 406.00 | Demand | 28,425 |  | - | 28,425 |  | - |
| 107 | TOTAL DEPRECIATION AND AMORTIZATION |  |  | 126,891 |  | - | 126,891 |  | - |
| 108 | State Utility Tax | 408.11 | Demand | 55,955 |  | - | 55,955 |  | - |
| 109 | State Privilege Tax | 408.12 | Demand | 29,533 |  | - | 29,533 |  | - |
| 110 | Retailing and Wholesaling Tax | 408.13 | Demand | 19 |  | - | 19 |  | - |
| 111 | Service Tax (Carrying Charges) | 408.16 | Demand | 1,140 |  | - | 1,140 |  | - |
| 112 | Unemployment Compensating Tax | 408.21 | Demand | 94 |  | - | 94 |  | - |
| 113 | State Industrial and Medical Tax | 408.23 | Demand | (0) |  | - | (0) |  | - |
| 114 | Leasehold Tax | 408.80 | Demand | 27 |  | - | 27 |  | - |
| 115 | TOTAL TAXES |  |  | 86,770 |  | - | 86,770 |  | - |
| 116 | TOTAL OPERATING EXPENSES |  |  | 477,692 |  | 0 | 477,692 |  | 0 |
| 117 | Check |  |  | - |  |  |  |  |  |
| 118 | FIXED CHARGES |  |  |  |  |  |  |  |  |
| 119 |  |  |  |  |  |  |  |  |  |
| 120 | Interest on Long Term Debt - 200 | 427.60 | Demand | 39,740 |  | - | 39,740 |  | - |
| 121 | Interest on Long Term Debt - 200 | 427.70 | Demand | 54,656 |  | - | 54,656 |  | - |

120 Interest on Long Term Debt - 200
427.60

Demand
39,740
54,656

## 39,740

Okanogan Final COS Study.xls

| Line | D |
| :---: | :---: |
| 122 | Loss on Reacquired Debt - 2001 |
| 123 | Debt Issuance Expense and Dis |
| 124 | Debt Issuance Expense and Dis |
| 125 | TOTAL INTEREST ON LONG T |
| 126 | NET OPERATING MARGIN |
| 127 | Check |
| 128 | INTEREST INCOME |
| 129 |  |
| 130 | Interest Income |
| 131 | Interest Income - Interdivisional |
| 132 | Gain or Loss on Disposition of P |
| 133 | TOTAL INTEREST INCOME |
| 134 | CONTRIBUTIONS AND DONAT |
| 135 |  |
| 136 | Contributions in Aid of Constructior |
| 137 | TOTAL CONTRIBUTIONS AND |
| 138 | Margins or Increase in Net Asse |
| 139 | Operating Revenue Requiremen |
| 140 | Less Contributions in Aid of Con |
| 141 | Less Non-Operating Revenue |
| 142 | Less Other Electric Revenues |
| 143 | Revenue Requirement from Rat |
| 144 | Wholesale Revenues |
| 145 | Revenue Requirement from Ret |
| 146 | OPERATING TIER |
| 147 | Including Wholesale Revenues |
| 148 | Excluding Wholesale Revenues |
| 149 | TOTAL TIER |
| 150 | Including Wholesale Revenues |
| 151 | Excluding Wholesale Revenues |
| RATE BASE |  |
| 152 | Organization - Intangible Plant |
| 153 | Misc Intangible Plant |
| 154 | TOTAL INTANGIBLE PLANT |




Okanogan County PUD
2008 Electric System Cost-of-Service Study
Classification of Transmission Expenses
Adjusted Test Year 2007

| Line | Description | Account | Classification Factor | Adjusted <br> Test Year <br> 2007 | Transmission |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Energy |  | Demand | Customer |  |
| 196 | Transportation Equipment | 392.00 | Demand | 184,848 |  |  | 184,848 |  | - |
| 197 | Stores Equipment | 393.00 | Demand | 3,475 |  | - | 3,475 |  | - |
| 198 | Tools, Shop, and Garage Equip | 394.00 | Demand | 46,841 |  | - | 46,841 |  | - |
| 199 | Laboratory Equipment | 395.00 | Demand | 15,327 |  | - | 15,327 |  | - |
| 200 | Power Operated Equipment | 396.00 | Demand | 32,331 |  | - | 32,331 |  | - |
| 201 | Communication Equipment | 397.00 | Demand | 207,472 |  | - | 207,472 |  | - |
| 202 | Miscellaneous Equipment | 398.00 | Demand | 2,662 |  | - | 2,662 |  | - |
| 203 | Other Tangible Property - General | 399.00 | Demand | 1 |  | - | 1 |  | - |
| 204 | TOTAL GENERAL PLANT |  |  | 777,213 |  | - | 777,213 |  | - |
| 205 | SUBTOTAL ELECTRIC PLANT IN SERVICE |  |  | 4,406,484 |  | - | 4,406,484 |  | - |
| 206 | Construction Work in Progress |  | Demand | 4,531,666 |  | - | 4,531,666 |  | - |
| 207 | TOTAL ELECTRIC PLANT |  |  | 8,938,150 |  | 0 | 8,938,150 |  | 0 |
| 208 | Working Capital |  |  |  |  |  |  |  |  |
| 209 | O\&M |  | Demand | 78,525 |  | - | 78,525 |  | - |
| 210 | Fuel \& Purchased Power |  |  |  |  |  | - |  | - |
| 211 | Materials \& Supplies |  | Demand | 358,968 |  |  | 358,968 |  | - |
| 212 | Prepayments |  | Demand | 2,106 |  | - | 2,106 |  | - |
| 213 |  |  | Demand | 102,581 |  | - | 102,581 |  | - |
| 214 | SUBTOTAL WORKING CAPITAL |  |  | 542,180 |  | - | 542,180 |  | - |
| 215 | Less Accumulated Depreciation | 1080.00 |  |  |  |  |  |  |  |
| 216 | Production |  | Blank | - |  | - | - |  | - |
| 217 | Transmission |  | Demand | $(2,242,701)$ |  | - | $(2,242,701)$ |  | - |
| 218 | Distribution |  | Blank |  |  | - | - |  | - |
| 219 | General |  | Demand | $(386,155)$ |  | - | $(386,155)$ |  | - |
| 220 | Accum Depr Manual | 1080.00 | Blank | - |  | - | - |  | - |
| 221 | RWIP | 1088.00 | Demand | $(7,141)$ |  | - | $(7,141)$ |  | - |
| 222 | Loss Due to Retirement | 1089.00 | Blank | - |  | - | - |  | - |
| 223 | Accum Provision for Amortization | 1150.00 | Blank | - |  | - | - |  | - |
| 224 | TOTAL ACCUMULATED DEPRECIATION AND AMORTIZATION |  |  | $(2,635,997)$ |  | - | (2,635,997) |  | - |
| 225 | Net RAte base |  |  | 6,844,333 |  | 0 | 6,844,333 |  | 0 |





> Okanogan County PUD 2008 Electric System Cost-of-Service Study Classification of Distribution Expenses Adjusted Test Year 2007



| Line | Distribution Factor | Factor | istributio |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Energy | Demand | Customer | Streetlights | Irrigation | Meter Reading | Meters | Customer Accounting | Customer Service | $\begin{gathered} \text { Demand } \\ \text { Secondary } \end{gathered}$ | Customers Secondary | Total |
| 1 | Energy | Energy | 1.00 | - | - |  | - |  | - |  |  |  |  | 1.00 |
| $2$ |  | Energy Factor | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 4 |  | Demand | - | 1.00 | - | - | - | - | - | - | - | - |  | 1.00 |
| 5 | Demand | Demand Factor | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 7 | Customers | Customer | - | - | 1.00 | - | - | - | - | - | - | - | - | 1.00 |
| 8 |  | Customer Factor | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Streetights | Streetights | - | - | - | 1.00 | - | - | - | - | - | - | - | 1.00 |
| 11 |  | Streetlights Factor | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | Irrigation | 1 Irigation |  | - | - |  | 1.00 |  |  |  |  |  |  | 1.00 |
| 14 |  | Irrigation Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 |  | O\&M less Fuel \& Purch Power |  | 6,223,312 | 482,666 | 82,020 |  | 438,098 | 934,705 | 1,413,567 | 600,481 | 756,921 | 277,411 | 11,209,181 |
| 17 | O\&M LF\&PP | O\&M Factor | 0.0\% | 55.5\% | 4.3\% | 0.7\% | 0.0\% | 3.9\% | 8.3\% | 12.6\% | 5.4\% | 6.8\% | 2.5\% | 100.0\% |
| 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 |  | Labor less A\&G Labor |  | 1,679,550 | 241,594 | 30,416 |  | 235,260 | 454,871 | 750,681 | 155,807 | 148,163 | - | 3,696,341 |
| 20 | Labor | Labor Factor | 0.0\% | 45.4\% | 6.5\% | 0.8\% | 0.0\% | 6.4\% | 12.3\% | 20.3\% | 4.2\% | 4.0\% | 0.0\% | 100.0\% |
| 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 |  | Rate Base | - | 33,323,215 | 177,460 | 341,517 | - | 72,016 | 1,410,435 | 232,367 | 98,709 | 7,117,053 | 4,024,203 | 46,796,975 |
| 23 | RateBs | Rate Base Factor | 0.0\% | 71.2\% | 0.4\% | 0.7\% | 0.0\% | 0.2\% | 3.0\% | 0.5\% | 0.2\% | 15.2\% | 8.6\% | 100.0\% |
| 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25 |  | Revenue Requirement |  | 9,335,439 | 491,255 | 113,591 |  | 437,281 | 1,054,505 | 1,410,931 | 599,361 | 1,431,762 | 661,661 | 15,535,787 |
| 26 | RevReqt | Revenue Requirement Factor | 0.0\% | 60.1\% | 3.2\% | 0.7\% | 0.0\% | 2.8\% | 6.8\% | 9.1\% | 3.9\% | 9.2\% | 4.3\% | 100.0\% |
| 27 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 |  | Distribution Plant | - | 45,413,806 | 154,761 | 517,407 | - | - | 1,982,323 | - | - | 11,029,452 | 6,275,436 | 65,373,184 |
| 29 | Dist Plant | Distribution Plant Factor | 0.0\% | 69.5\% | 0.2\% | 0.8\% | 0.0\% | 0.0\% | 3.0\% | 0.0\% | 0.0\% | 16.9\% | 9.6\% | 100.0\% |
| 30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31 |  | Gross Plant | - | 60,844,827 | 187,947 | 628,357 | - | - | 2,407,403 | - | - | 13,394,554 | 7,621,110 | 85,084,198 |
| 32 | Gross Plant | Gross Plant Factor | 0.0\% | 71.5\% | 0.2\% | 0.7\% | 0.0\% | 0.0\% | 2.8\% | 0.0\% | 0.0\% | 15.7\% | 9.0\% | 100.0\% |
| 33 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 |  | General Plant | - | 9,738,317 | 33,186 | 110,950 | - | - | 425,080 | - | - | 2,365,102 | 1,345,674 | 14,018,310 |
| 35 | Gen Plant | General Plant Factor | 0.0\% | 69.5\% | 0.2\% | 0.8\% | 0.0\% | 0.0\% | 3.0\% | 0.0\% | 0.0\% | 16.9\% | 9.6\% | 100.0\% |
| 36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 37 |  | Net Plant |  | 30,086,699 | 91,394 | 305,554 | - | - | 1,170,658 | - | - | 6,513,429 | 3,705,951 | 41,873,685 |
| 38 | Net Plant | Net Plant Factor | 0.0\% | 71.9\% | 0.2\% | 0.7\% | 0.0\% | 0.0\% | 2.8\% | 0.0\% | 0.0\% | 15.6\% | 8.9\% | 100.0\% |
| 39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 |  | Distribution maint labor | - | 489,201 | - | 17,343 | - | - | - | - | - | 85,671 | - | 592,215 |
| 41 | Dist Maint Labor | Distribution maint labor Factor | 0.0\% | 82.6\% | 0.0\% | 2.9\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 14.5\% | 0.0\% | 100.0\% |
| 42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 |  | Distribution Operations Labor | - | 1,200,042 | 172,619 | 21,732 | - | - | 325,006 | - | - | 105,863 | - | 1,825,263 |
| 44 | Dist Ops Labor | Distribution Operations Labor Factor | 0.0\% | 65.7\% | 9.5\% | 1.2\% | 0.0\% | 0.0\% | 17.8\% | 0.0\% | 0.0\% | 5.8\% | 0.0\% | 100.0\% |
| 45 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 |  | Meter Reading | - | - | - | - | - | 1.00 | - | - | - | - | - | 1.00 |
| 47 | Meter Reading | Meter Reading Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 49 50 |  | Meters Meters Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 1.00 $100.0 \%$ | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 1.00 $100.0 \%$ |
| 51 | Meters |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 52 |  | Customer Accounting | - | - | - | - | - | - | - | 1.00 | - | - | - | 1.00 |
| 53 | Customer Accounting | Customer Accounting Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |
| 54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 55 |  | Customer Service | - | - | - | - | - | - | - | - | 1.00 | - | - | 1.00 |
| 56 | Customer Service | Customer Service Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 100.0\% |
| 57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 58 |  | Demand Secondary | - | - | - | - | - | - | - | - | - | 1.00 | - | 1.00 |
| $\begin{aligned} & 59 \\ & 60 \end{aligned}$ | Demand Secondary | Demand Secondary Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 100.0\% |
| 61 |  | Customers Secondary | - | - | - | - | - | - | - | - | - | - | 1.00 | 1.00 |
| 62 | Customers Secondary | Customers Secondary Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 100.0\% |

## Appendix D COST-OF-SERVICE ANALYSIS RESULTSA LOCATION

| No. | Allocation | Total | Residential | General Service |  | Industrial |  | Irrigation |  | Frost Control |  | Street Lights | Allocation Factor |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Production |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Energy | \$17,620,533 | \$8,216,281 | \$5,730,114 |  | \$1,695,300 |  | \$1,930,326 |  | \$11,447 |  | \$37,065 | Energy |
| 3 | Demand | 8,588,213 | 4,527,203 | 2,421,215 |  | 487,645 |  | 1,119,433 |  | 20,604 |  | 12,113 | A\&E |
| 4 | Customer | 0 | 0 | 0 |  | 0 |  | 0 |  | 0 |  | 0 | Blank |
| 5 | Total Production Costs | \$26,208,747 | \$12,743,483 | \$8,151,329 |  | \$2,182,945 |  | \$3,049,759 |  | \$32,051 |  | \$49,179 |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | Transmission |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | Energy | \$0 | \$0 | \$0 |  | \$0 |  | \$0 |  | \$0 |  | \$0 | Blank |
| 9 | Demand | 1,422,276 | 749,741 | 400,972 |  | 80,758 |  | 185,387 |  | 3,412 |  | 2,006 | A\&E |
| 10 | Customer | 0 | 0 | 0 |  | 0 |  | 0 |  | 0 |  | 0 | Blank |
| 11 | Total Transmission Costs | \$1,422,276 | \$749,741 | \$400,972 |  | \$80,758 |  | \$185,387 |  | \$3,412 |  | \$2,006 |  |
| 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | Distribution |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 | Energy | \$0 | \$0 | \$0 |  | \$0 |  | \$0 |  | \$0 |  | \$0 | Blank |
| 15 | Demand | 9,335,439 | 4,800,422 | 3,003,194 |  | 579,083 |  | 929,257 |  | 6,015 |  | 17,468 | 12 NCP |
| 16 | Customer | 491,255 | 400,216 | 57,950 |  | 84 |  | 29,298 |  | 3,190 |  | 518 | Customers |
| 17 | Streetlights | 113,591 | 0 | 0 |  | 0 |  | 0 |  | 0 |  | 113,591 | StreetLt |
| 18 | Irrigation | $(313,175)$ | 0 | 0 |  | 0 |  | $(313,175)$ |  | 0 |  | 0 | Irrigation |
| 19 | Meter Reading | 437,281 | 325,971 | 94,398 |  | 137 |  | 15,909 |  | 866 |  | 0 | Weighted Meters/MR |
| 20 | Meters | 1,054,505 | 679,839 | 137,813 |  | 2,861 |  | 211,018 |  | 22,975 |  | 0 | Weighted Meters/Cap |
| 21 | Customer Accounting | 1,410,931 | 1,149,457 | 166,436 |  | 242 |  | 84,147 |  | 9,162 |  | 1,487 | Customers |
| 22 | Customer Service | 599,361 | 471,033 | 95,485 |  | 159 |  | 32,184 |  | 501 |  | 0 | Weighted Customers/CS |
| 23 | Demand Secondary | 1,431,762 | 784,923 | 491,056 |  | 0 |  | 151,944 |  | 984 |  | 2,856 | 12 NCP Secondary |
| 24 | Customers Secondary | 661,661 | 539,134 | 78,064 |  | 0 |  | 39,468 |  | 4,297 |  | 697 | Customers Secondary |
| 25 | Total Distribution Costs | \$15,222,612 | \$9,150,996 | \$4,124,396 |  | \$582,566 |  | \$1,180,049 |  | \$47,989 |  | \$136,616 |  |
| 26 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27 | Total Cost-of-Service | \$42,853,635 | \$22,644,220 | \$12,676,697 |  | \$2,846,269 |  | \$4,415,195 |  | \$83,452 |  | \$187,801 |  |
| 28 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 29 | Normalized Revenues under Existing Rates |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 | Retail Rates | \$30,864,028 | \$14,761,937 | \$11,117,623 |  | \$2,479,156 |  | \$2,319,265 |  | \$61,602 |  | \$124,445 |  |
| 31 | Sales for Resale | 11,989,607 | 5,590,635 | 3,898,963 |  | 1,153,540 |  | 1,313,459 |  | 7,789 |  | 25,221 | Energy |
| 32 | Total Normalized Revenues | \$42,853,635 | \$20,352,572 | \$15,016,586 |  | \$3,632,696 |  | \$3,632,724 |  | \$69,391 |  | \$149,665 |  |
| 33 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 | Over/(Under) Cost-of-Service | \$0 | (\$2,291,648) | \$2,339,889 |  | \$786,427 |  | $(\$ 782,471)$ |  | (\$14,061) |  | $(\$ 38,136)$ |  |
| 35 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 | Percent Difference | 0.00\% | 11.26\% | -15.58\% |  | -21.65\% |  | 21.54\% |  | 20.26\% |  | 25.48\% |  |
| 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 | Customer-Months | 239,170 | 194,847 | 28,213 |  | 41 |  | 14,264 |  | 1,553 |  | 252 |  |
| 39 | kWh - Adj | 622,346,744 | 290,194,135 | 202,384,205 |  | 59,876,997 |  | 68,177,965 |  | 404,313 |  | 1,309,130 |  |
| 40 | kW-Months - Adj | 763,451 | n/a | 519,259 |  | 133,474 |  | 108,835 |  | 1,883 |  | n/a |  |
| 41 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 | Unit Costs not including Sales for Resale |  |  |  |  |  |  |  |  |  |  |  |  |
| 43 | \$/Customer-Month |  | \$ 18.30 | \$ 22.34 | \$ | 84.95 | \$ | 28.89 | \$ | 26.39 | \$ | 10.72 |  |
| 44 | \$/kWh |  | \$ 0.06574 | \$ 0.02831 | \$ | 0.02831 | \$ | 0.02372 | \$ | 0.02831 | \$ | 0.14139 |  |
| 45 | \$/kW-Month |  | $\mathrm{n} / \mathrm{a}$ | \$ 12.16 | \$ | 8.60 | \$ | 21.92 | \$ | 16.47 |  | n/a |  |
| 46 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 47 | Fixed Costs (\$/Customer-Month) |  | \$ 74.05 | \$ 246.22 | \$ | 28,072.41 | \$ | 196.16 | \$ | 46.37 | \$ | 598.16 |  |
| 48 | Variable Costs (\$/kWh) |  | \$ 0.02831 | \$ 0.02831 | \$ | 0.02831 | \$ | 0.02372 | \$ | 0.02831 | \$ | 0.02831 |  |
| 49 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 | Unit Costs including Sales for Resale |  |  |  |  |  |  |  |  |  |  |  |  |
| 51 | \$/kWh |  | \$ 0.04648 | \$ 0.00905 | \$ | 0.00905 | \$ | 0.00445 | \$ | 0.00905 | \$ | 0.12213 |  |
| 52 | Variable Costs (\$/kWh) |  | \$ 0.00905 | \$ 0.00905 | \$ | 0.00905 | \$ | 0.00445 | \$ | 0.00905 | \$ | 0.00905 |  |



| Line | Allocation Factor | Factor | Residential | General Service | Industrial | Irrigation | Frost Control | Street Lights | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | CP (kW) | 104,394 | 51,360 | 8,134 | - | - | 289 | 164,177 |
| 2 | CP | CP (kW) Factor | 63.6\% | 31.3\% | 5.0\% | 0.0\% | 0.0\% | 0.2\% | 100.0\% |
| 3 |  |  |  |  |  |  |  |  |  |
| 4 |  | 4 CP (kW) | 343,687 | 204,376 | 34,344 | - | - | 865 | 583,272 |
| 5 | 4 CP | 4 CP (kW) Factor | 58.9\% | 35.0\% | 5.9\% | 0.0\% | 0.0\% | 0.1\% | 100.0\% |
| 6 |  |  |  |  |  |  |  |  |  |
| 7 |  | 12 CP (kW) | 678,010 | 471,308 | 98,274 | 132,075 | 1,176 | 865 | 1,381,708 |
| 8 | 12 CP | 12 CP (kW) Factor | 49.1\% | 34.1\% | 7.1\% | 9.6\% | 0.1\% | 0.1\% | 100.0\% |
| 9 |  |  |  |  |  |  |  |  |  |
| 10 |  | 1 NCP (kW) | 118,881 | 60,262 | 10,635 | 28,394 | 578 | 286 | 219,035 |
| 11 | 1 NCP | 1 NCP (kW) Factor | 54.3\% | 27.5\% | 4.9\% | 13.0\% | 0.3\% | 0.1\% | 100.0\% |
| 12 |  |  |  |  |  |  |  |  |  |
| 13 |  | 4 NCP (kW) | 336,324 | 177,680 | 31,178 | 82,569 | 1,155 | 851 | 629,757 |
| 14 | 4 NCP | 4 NCP (kW) Factor | 53.4\% | 28.2\% | 5.0\% | 13.1\% | 0.2\% | 0.1\% | 100.0\% |
| 15 |  |  |  |  |  |  |  |  |  |
| 16 |  | 12 NCP (kW) | 921,515 | 576,509 | 111,164 | 178,385 | 1,155 | 3,353 | 1,792,082 |
| 17 | 12 NCP | 12 NCP (kW) Factor | 51.4\% | 32.2\% | 6.2\% | 10.0\% | 0.1\% | 0.2\% | 100.0\% |
| 18 |  |  |  |  |  |  |  |  |  |
| 19 |  | Secondary 12 NCP (kW) | 921,515 | 576,509 | - | 178,385 | 1,155 | 3,353 | 1,680,918 |
| 20 | 12 NCP Secondary | Secondary 12 NCP (kW) Factor | 54.8\% | 34.3\% | 0.0\% | 10.6\% | 0.1\% | 0.2\% | 100.0\% |
| 21 |  |  |  |  |  |  |  |  |  |
| 22 |  | Average \& Excess | 0.527 | 0.282 | 0.057 | 0.130 | 0.002 | 0.001 | 1.00 |
| 23 | A\&E | Average \& Excess factor | 52.7\% | 28.2\% | 5.7\% | 13.0\% | 0.2\% | 0.1\% | 100.0\% |
| 24 |  |  |  |  |  |  |  |  |  |
| 25 |  | Retail Energy Sales (kWh) | 290,194,135 | 202,384,205 | 59,876,997 | 68,177,965 | 404,313 | 1,309,130 | 622,346,744 |
| 26 | Energy | Energy Sales factor | 46.6\% | 32.5\% | 9.6\% | 11.0\% | 0.1\% | 0.2\% | 100.0\% |
| 27 |  |  |  |  |  |  |  |  |  |
| 28 |  | Customers | 194,847 | 28,213 | 41 | 14,264 | 1,553 | 252 | 239,170 |
| 29 | Customers | Customers Factor | 81.5\% | 11.8\% | 0.0\% | 6.0\% | 0.6\% | 0.1\% | 100.0\% |
| 30 |  |  |  |  |  |  |  |  |  |
| 31 |  | Customers/CS Weighting | 7.50 | 10.50 | 12.00 | 7.00 | 1.00 | - |  |
| 32 |  |  |  |  |  |  |  |  |  |
| 33 |  | Weighted Customers/CS | 1,461,353 | 296,237 | 492 | 99,848 | 1,553 | - | 1,859,482 |
| 34 | Weighted Customers/CS | Weighted Customers/CS Factor | 78.6\% | 15.9\% | 0.0\% | 5.4\% | 0.1\% | 0.0\% | 100.0\% |
| 35 |  |  |  |  |  |  |  |  |  |
| 36 |  | Customers Secondary | 194,847 | 28,213 | - | 14,264 | 1,553 | 252 | 239,129 |
| 37 | Customers Secondary | Customers Secondary Factor | 81.5\% | 11.8\% | 0.0\% | 6.0\% | 0.6\% | 0.1\% | 100.0\% |
| 38 |  |  |  |  |  |  |  |  |  |
| 39 |  | Meters | 194,847 | 28,213 | 41 | 14,264 | 1,553 | 252 | 239,170 |
| 40 | Meters | Meters Factor | 81.5\% | 11.8\% | 0.0\% | 6.0\% | 0.6\% | 0.1\% | 100.0\% |
| 41 |  |  |  |  |  |  |  |  |  |
| 42 |  | Meters/MR Weighting | 6.00 | 12.00 | 12.00 | 4.00 | 2.00 | - |  |
| 43 |  |  |  |  |  |  |  |  |  |
| 44 |  | Weighted Meters/MR | 1,169,082 | 338,556 | 492 | 57,056 | 3,106 | - | 1,568,292 |
| 45 | Weighted Meters/MR | Weighted Meters/MR Factor | 74.5\% | 21.6\% | 0.0\% | 3.6\% | 0.2\% | 0.0\% | 100.0\% |
| 46 |  |  |  |  |  |  |  |  |  |
| 47 |  | Meters/Cap. Cost Weighting | 1.00 | 1.40 | 20.00 | 4.24 | 4.24 | - |  |
| 48 |  |  |  |  |  |  |  |  |  |
| 49 |  | Weighted Meters/Cap | 194,847 | 39,498 | 820 | 60,479 | 6,585 | - | 302,229 |
| 50 | Weighted Meters/Cap | Weighted Meters/Cap Factor | 64.5\% | 13.1\% | 0.3\% | 20.0\% | 2.2\% | 0.0\% | 100.0\% |
| 51 |  |  |  |  |  |  |  |  |  |
| 52 |  | Street Lighting | - | - | - | - | - | 1.00 | 1.00 |
|  |  |  |  |  |  |  |  | Okanogan Final C | Study.xls |
|  |  |  |  |  |  |  |  | Alloc | Factors |
|  | R. W. Beck, Inc. |  |  | D-3 |  |  |  |  | 5/8/2009 |

Okanogan County PUD
2008 Electric System Cost-of-Service Study
Allocation Factors

| Line | Allocation Factor | Factor | Residential | General Service | Industrial | Irrigation | Frost Control | Street Lights | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 53 | StreetLt | Street Lighting Factor | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 100.0\% |
| 54 |  |  |  |  |  |  |  |  |  |
| 55 |  | Retail Revenues | 14,761,937 | 11,117,623 | 2,479,156 | 2,319,265 | 61,602 | 124,445 | 30,864,028 |
| 56 | Retail Revenues | Retail Revenues Factor | 47.8\% | 36.0\% | 8.0\% | 7.5\% | 0.2\% | 0.4\% | 100.0\% |
| 57 |  |  |  |  |  |  |  |  |  |
| 58 |  | Irrigation | - | - | - | 1.00 | - | - | 1.00 |
| 59 | Irrigation | Irrigation Factor | 0.0\% | 0.0\% | 0.0\% | 100.0\% | 0.0\% | 0.0\% | 100.0\% |
| 60 |  |  |  |  |  |  |  |  |  |
| 61 |  | Residential | 1.00 | - | - | - | - | - | 1.00 |
| 62 | Residential | Residential Factor | 100.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 0.0\% | 100.0\% |

## Appendix E DEVELOPMENT OF LOAD RESEARCH ANALYSIS INFORMATION

# Development of Load Research Analysis Information 

## Overview

Okanogan County Public Utility District (the District or Okanogan County PUD) needed load research information to develop allocation factors for its 2008 Electric System Cost-of-Service Study. Load research data is a critical component in the allocation of certain key costs in a cost-of-service analysis and the District had not previously completed an independent load research study. For purposes of this cost-of-service analysis, R. W. Beck estimated load research data for the District using the following data provided by the District's staff and from load research studies completed for comparable utilities:

- Data provided by the District:
o Retail energy sales by customer class for 2007
o Monthly customer counts by customer class for 2007
o Monthly system peak demand data for 2007
o Estimated average energy losses for 2007
o Street light inventory
- Data from comparable utilities:
o Estimates of coincident peak and non-coincident peak demand load factors by customer class for the following Public Utility Districts: Franklin County, Benton County, Chelan County, and Grant County.

The purpose of this effort was to develop customer class load research information comparable to that which would be developed by an independent load research program, and that would be suitable for developing allocation factors to be used in the District's cost-of-service analysis.

## Methodology

The following steps were taken to develop the load research information for the District:

1. Using the data obtained from load research studies completed by other utilities, comparable customer classes from the other utilities were determined to be used to estimate the load of Okanogan County PUD's customer classes. The following customer classes from Franklin County and Grant County PUDs were used to estimate the monthly coincident peak demand load factors for the residential, general service, industrial and irrigation customer classes at Okanogan County PUD. Estimates of non-coincident peak demand load factors included data from Benton County and Chelan County PUDs, as available.

| Okanogan County PUD <br> Customer Classes | Franklin County PUD <br> Customer Classes | Grant County PUD <br> Customer Class |
| :---: | :---: | :---: |
| Residential | Residential | Schedule 1 (Domestic) |
| General Service | Medium General Service | Schedule 2 (General Service) |
| Industrial | Industrial | Schedule 14 (Industrial) |
| Irrigation | Small Irrigation | Schedule 3 (Irrigation) |
| Frost Control | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Street Lighting | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |

2. For the Frost Control customer class, a load factor of 0.500 was assumed for both coincident and non-coincident peak demand loads.
3. For the Street Lighting customer class, coincident and non-coincident peak demand load factors were estimated using the time of system peak, an inventory of street lights, and the approximate hours the street lights would be turned on.
4. Retail energy sales for 2007 by month were adjusted to account for billing cycle lags for each customer class to approximate the amount of energy used by each class by month.
5. Using the estimated load factors and retail energy sales for each class, coincident peak demand and non-coincident peak demand loads for each customer class were estimated.
6. Average energy losses were estimated at 6.3 percent of total energy requirements annually, and were allocated to each month using the square of the total load. Coincident and non-coincident peak demand load losses were estimated at 1.15 times the average energy losses for each month based on information developed in prior load research estimation analyses conducted for other utilities.
7. Losses were allocated to each customer class using either energy or coincident peak demand loads, with slightly fewer losses being allocated to the industrial class for its higher voltage service.
8. The coincident peak demand loads calculated from the estimations of each class' contribution to system coincident peak demand levels including losses was compared to the monthly system peak demand load data. Final adjustments were made as necessary to achieve a $\pm 5$ percentage point margin of error for the customer class load research estimates. (In load research studies conducted for electric utilities, a $\pm 5$ to 10 percent margin of error is generally considered an acceptable accuracy level.)

## Results

Table 1 and Figure 1 summarize the estimated contributions to coincident peak load demand by each of the District's customer classes.


Figure 1: Okanogan County PUD - Estimated Monthly Coincident Peak Demand Loads Including Losses

Table 1
Okanogan County PUD Estimated Monthly Coincident Peak Demand Loads Including Losses (kW)

| Month | Residential | Gen Service | Industrial | Irrigation | Frost Control | Street Lights | Total |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| January | 104,394 | 51,360 | 8,134 | 0 | 0 | 289 | 164,177 |
| February | 88,794 | 43,517 | 7,583 | 0 | 0 | 287 | 140,180 |
| March | 69,695 | 39,951 | 7,211 | 4,917 | 295 | 0 | 122,070 |
| April | 53,822 | 34,835 | 7,464 | 13,898 | 588 | 0 | 110,606 |
| May | 33,907 | 27,616 | 6,990 | 14,756 | 293 | 0 | 83,562 |
| June | 30,439 | 28,081 | 7,682 | 18,695 | 0 | 0 | 84,896 |
| July | 34,354 | 32,789 | 7,909 | 22,814 | 0 | 0 | 97,866 |
| August | 32,743 | 34,485 | 7,141 | 24,557 | 0 | 0 | 98,926 |
| September | 33,087 | 29,491 | 9,906 | 22,144 | 0 | 0 | 94,629 |
| October | 46,276 | 39,684 | 9,628 | 10,293 | 0 | 0 | 105,881 |
| November | 73,101 | 54,794 | 9,247 | 0 | 0 | 0 | 137,141 |
| December | 77,399 | 54,706 | 9,381 | 0 | 0 | 289 | 141,774 |

Tables 2 and 3 summarize the estimated coincident peak demand load and non-coincident peak demand load factors used to estimate the peak demand levels for each customer class.

Table 2
Okanogan County PUD
Estimated Coincident Peak Demand Load Factors

| Month | Residential | Gen Service | Industrial | Irrigation | Frost Control | Street Lights |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| January | 0.578 | 0.651 | 0.880 | 0.000 | 0.000 | 0.569 |
| February | 0.592 | 0.678 | 0.889 | 0.000 | 0.000 | 0.579 |
| March | 0.588 | 0.617 | 0.920 | 0.186 | 0.500 | 0.000 |
| Arril | 0.582 | 0.598 | 0.892 | 0.565 | 0.500 | 0.000 |
| May | 0.713 | 0.674 | 0.924 | 0.864 | 0.500 | 0.000 |
| June | 0.725 | 0.728 | 0.920 | 0.812 | 0.000 | 0.000 |
| July | 0.662 | 0.639 | 0.903 | 0.798 | 0.000 | 0.000 |
| August | 0.690 | 0.596 | 0.926 | 0.750 | 0.000 | 0.000 |
| September | 0.703 | 0.720 | 0.802 | 0.777 | 0.000 | 0.000 |
| October | 0.636 | 0.606 | 0.788 | 0.841 | 0.000 | 0.000 |
| November | 0.566 | 0.539 | 0.850 | 0.162 | 0.000 | 0.000 |
| December | 0.715 | 0.604 | 0.879 | 0.829 | 0.000 | 0.561 |

Table 3
Okanogan County PUD
Estimated Non-Coincident Peak Demand Load Factors

| Month | Residential | Gen Service | Industrial | Irrigation | Frost Control | Street Lights |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| January | 0.502 | 0.562 | 0.740 | 0.052 | 0.000 | 0.569 |
| February | 0.453 | 0.495 | 0.786 | 0.040 | 0.000 | 0.579 |
| March | 0.441 | 0.520 | 0.796 | 0.121 | 0.500 | 0.560 |
| April | 0.418 | 0.493 | 0.793 | 0.285 | 0.500 | 0.560 |
| May | 0.388 | 0.445 | 0.652 | 0.438 | 0.500 | 0.560 |
| June | 0.461 | 0.470 | 0.835 | 0.731 | 0.000 | 0.560 |
| July | 0.452 | 0.522 | 0.737 | 0.747 | 0.000 | 0.560 |
| August | 0.458 | 0.542 | 0.801 | 0.672 | 0.000 | 0.560 |
| September | 0.448 | 0.476 | 0.738 | 0.766 | 0.000 | 0.560 |
| October | 0.408 | 0.494 | 0.722 | 0.389 | 0.000 | 0.560 |
| November | 0.445 | 0.499 | 0.817 | 0.220 | 0.000 | 0.561 |
| December | 0.526 | 0.540 | 0.800 | 0.347 | 0.000 | 0.561 |

The estimated coincident peak demand levels for each customer class, when aggregated were targeted to be within $\pm 5$ percentage points of the system peak demand loads for each month. Table 4 displays the monthly calculated system peak demand from this analysis in comparison with the actual measured system peak demand levels.

Table 4
Okanogan County PUD
Actual and Estimated System Peak Demand Levels
(kW)

| Month | Actual | Estimated | Difference (\%) |
| :--- | ---: | ---: | :---: |
| January | 161,000 | 164,177 | $2.0 \%$ |
| February | 137,000 | 140,180 | $2.3 \%$ |
| March | 123,000 | 122,070 | $-0.8 \%$ |
| April | 112,000 | 110,606 | $-1.2 \%$ |
| May | 80,000 | 83,562 | $4.5 \%$ |
| June | 81,000 | 84,896 | $4.8 \%$ |
| July | 100,000 | 97,866 | $-2.1 \%$ |
| August | 102,000 | 98,926 | $-3.0 \%$ |
| September | 93,000 | 94,629 | $1.8 \%$ |
| October | 107,000 | 105,881 | $-1.0 \%$ |
| November | 132,000 | 137,141 | $3.9 \%$ |
| December | 139,000 | 141,774 | $2.0 \%$ |

Load research data is a critical component in the allocation of costs in a cost-of-service study. Table 5 displays the customer class allocation factors that were calculated using the estimated load research analysis data for the District discussed above.

Table 5
Okanogan County PUD Cost-of-Service Allocation Factors

| Allocator | Residential | General Service | Industrial | Irrigation | Frost Control | Street Lights | Total |
| :--- | ---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| Peak Responsibility |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Coincident Peak (1CP) | $63.6 \%$ | $31.3 \%$ | $5.0 \%$ | $0.0 \%$ | $0.0 \%$ | $0.2 \%$ | $100.0 \%$ |
| Sum of 4 Month CP (4CP) | $58.9 \%$ | $35.0 \%$ | $5.9 \%$ | $0.0 \%$ | $0.0 \%$ | $0.1 \%$ | $100.0 \%$ |
| Sum of 12 Month CP (12CP) | $49.1 \%$ | $34.1 \%$ | $7.1 \%$ | $9.6 \%$ | $0.1 \%$ | $0.1 \%$ | $100.0 \%$ |
| Non-Coincident Peak (1NCP) | $54.3 \%$ | $27.5 \%$ | $4.9 \%$ | $13.0 \%$ | $0.3 \%$ | $0.1 \%$ | $100.0 \%$ |
| Sum of 4 Month NCP (4NCP) | $53.4 \%$ | $28.2 \%$ | $5.0 \%$ | $13.1 \%$ | $0.2 \%$ | $0.1 \%$ | $100.0 \%$ |
| Sum of 12 Month NCP (12NCP) | $51.4 \%$ | $32.2 \%$ | $6.2 \%$ | $10.0 \%$ | $0.1 \%$ | $0.2 \%$ | $100.0 \%$ |
| Energy Sales | $46.6 \%$ | $32.5 \%$ | $9.6 \%$ | $11.0 \%$ | $0.1 \%$ | $0.2 \%$ | $100.0 \%$ |
| Energy Requirement | $46.8 \%$ | $32.6 \%$ | $9.5 \%$ | $10.9 \%$ | $0.1 \%$ | $0.2 \%$ | $100.0 \%$ |
|  |  |  |  |  |  |  |  |
| Average and Excess |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Average Demand | 33,127 | 23,103 | 6,835 | 7,783 | 46 | 149 | 71,044 |
| 1NCP | 110,138 | 56,273 | 10,268 | 27,433 | 552 | 265 | 204,929 |
| Excess Demand | 77,011 | 33,170 | 3,433 | 19,650 | 506 | 116 | 133,885 |
| Average Demand Component | $20.6 \%$ | $14.3 \%$ | $4.2 \%$ | $4.8 \%$ | $0.0 \%$ | $0.1 \%$ | $44.1 \%$ |
| Excess Demand Component | $32.1 \%$ | $13.8 \%$ | $1.4 \%$ | $8.2 \%$ | $0.2 \%$ | $0.0 \%$ | $55.9 \%$ |
| Total Allocation Factor | $52.7 \%$ | $28.2 \%$ | $5.7 \%$ | $13.0 \%$ | $0.2 \%$ | $0.1 \%$ | $100.0 \%$ |

May 2009


[^0]:    1 In addition to the six customer classes listed, the District has additional rate schedules for New Single Large Loads (service schedule number 5) and Area Lighting (service schedule number 10).

