

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-05 \_\_\_\_\_

EXHIBIT NO. \_\_\_\_ (TLK-2)

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## **ELECTRIC COST OF SERVICE**

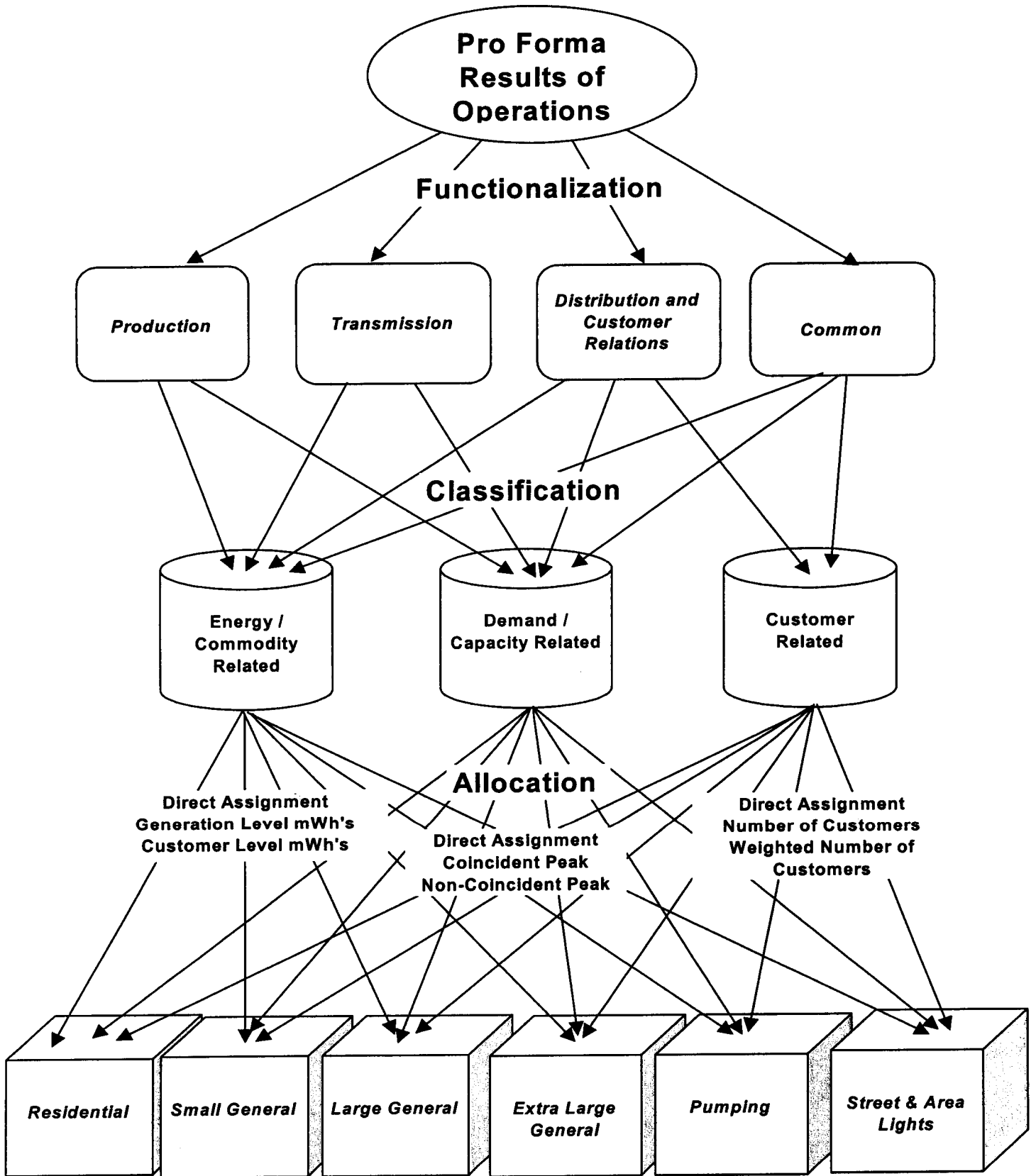
A cost of service study is an engineering-economic study, which apportions the revenue, expenses, and rate base associated with providing electric service to designated groups of customers. It indicates whether the revenue provided by the customers recovers the cost to serve those customers. The study results are used as a guide in determining the appropriate rate spread among the groups of customers.

There are three basic steps involved in a cost of service study: functionalization, classification, and allocation. See flow chart.

First, the expenses and rate base associated with the electric system under study are assigned to functional categories. The uniform system of accounts provides the basic segregation into production, transmission, and distribution. Traditionally, customer accounting, customer information, and sales expenses are included in the distribution function and administrative and general expenses and general plant rate base are allocated to all functions. In this study I have created a separate functional category for common costs. Administrative and general costs that cannot be directly assigned to the other functions have been placed in this category.

Second, the expenses and rate base items which cannot be directly assigned to customer groups are classified into three primary cost components: energy, demand or customer related. Energy related costs are allocated based on each rate schedule's share of commodity consumption. Demand (capacity) related costs are allocated to rate schedules on the basis of each schedule's contribution to peak demand. Customer related items are allocated to rate schedules based on the number of customers within each schedule. The number of customers may be weighted by appropriate factors such as relative cost of metering equipment. In addition to these three cost components, any revenue related expense is allocated based on the proportion of revenues by rate schedule.

# ELECTRIC COST OF SERVICE STUDY FLOWCHART



***Pro Forma Results of Operations by Customer Group***

The final step is allocation of the costs to the various rate schedules utilizing the allocation factors selected for each specific cost item. These factors are derived from usage and customer information associated with the test period results of operations.

### **BASE CASE COST OF SERVICE STUDY**

#### **Production and Transmission Classification (Peak Credit)**

This study utilizes a Peak Credit methodology to classify production and transmission costs into demand and energy classifications. The Peak Credit method acknowledges that baseload production facilities provide energy throughout the year as well as capacity during system peaks and likewise the transmission system is built not only for peak use, but also for everyday delivery of energy. The demand/energy ratio is determined by the relationship of the current replacement cost per kW generating capacity of the Company's peaking units to the current replacement cost per kW generating capacity of the Company's thermal or hydro plant. The 2004 peak credit ratio for thermal plant is 45.33% to demand and 54.67% to energy. The 2004 peak credit ratio for hydro plant is 32.11% to demand and 67.89% to energy. The plant additions included in pro forma results have been incorporated in the 2004 calculations. As an intermediate resource (between peaking and baseload) Coyote Springs II has been included with the thermal plant costs, while Boulder Park and Kettle Falls CT have been included with the peaking units.

Transmission costs are classified by fifty-fifty weighting of the thermal and hydro peak credit ratios resulting in the transmission peak credit ratio of 38.72% to demand and 61.28% to energy. Fuel and load dispatching expenses are classified entirely to energy. Peaking plant related costs are classified entirely to demand. Purchased Power and Other Power Supply expenses, and PGE Monetization benefits are classified to demand and energy by the relative amounts of assigned and allocated Production Plant in Service. WNP3 Settlement Exchange Power costs are classified as energy related.

### **Production and Transmission Allocation**

Production and transmission demand related costs are allocated to the customer classes by class contribution to the average of the twelve monthly system coincident peak loads. Although the Company is usually technically a winter peaking utility, it experiences high summer peaks and careful management of capacity requirements is required throughout the year. The use of the average of twelve monthly peaks recognizes that customer capacity needs are not limited to the heating season.

Energy related costs are allocated to class by pro forma annual kilowatthour sales adjusted for losses to reflect generation level consumption.

### **Distribution Facilities Classification (Basic Customer)**

The Basic Customer method considers only services and meters and directly assigned Street Lighting apparatus (FERC Accounts 369, 370, and 373 respectively) to be customer related distribution plant. All other distribution plant is then considered demand related. This division delineates plant which benefits an individual customer from plant which is part of the system. The basic customer method provides a reasonable, clearly definable division between plant that provides service only to individual customers from plant that is part of the interconnected distribution network. Additionally, the basic customer method has been explicitly accepted for both electric and gas cost of service in the State of Washington.

### **Customer Relations Distribution Cost Classification**

Customer service, customer information and sales expenses are the core of the customer relations functional unit which is included with the distribution cost category. For the most part they are classified as customer related. Exceptions are sales expenses which are classified as energy related and uncollectible accounts expense which is considered separately as a revenue conversion item.

### **Distribution Cost Allocation**

Distribution demand related costs which cannot be directly assigned are allocated to customer class by the average of the twelve monthly non-coincident peaks for each class. Distribution facilities that serve only secondary voltage customers are allocated by non-coincident peak excluding all primary and transmission voltage customers. This includes line transformers, services, and secondary voltage overhead or underground conductors and devices. Primary voltage overhead or underground conductors and devices are allocated by non-coincident peak for all customers except the one transmission voltage customer.

Most customer costs are allocated by average number of customers. Weighted customer allocators have been developed using typical current cost of meters, estimated meter reading time, and direct assignment of billing costs for hand-billed customers. Street and area light customers are excluded from metering and meter reading expenses as their service is not metered.

### **Administrative and General Costs**

Administrative and general costs which are directly associated with production, transmission, distribution, or customer relations functions are directly assigned to those functions and allocated to customer class by the relevant plant or number of customers. The remaining administrative and general costs are considered common costs, and have been left in their own functional category. These common costs are allocated to rate class by factors equivalent to those approved for Puget Sound Power and Light (now PSE) in Docket No. UE-920499 and indirectly classified by the implicit relationship of energy, demand and customer that make up the various allocation factors applied to the costs.

Common plant items are allocated to rate class by either relative: production, transmission, distribution plant; production, transmission, distribution labor subtotal; or operating and maintenance labor total. Most common administrative and general expenses are allocated to rate

class by relative operating and maintenance expenses before administrative and general expenses excluding purchased power, fuel, wheeling, and revenue items. Property insurance expense is allocated by plant totals. Injuries & damages and pensions & benefits expenses are allocated by operating and maintenance labor expense totals.

### **Revenue Conversion Items**

In this study state excise tax, uncollectible accounts and commission fees have been classified as revenue related and are allocated by pro forma revenue. These items vary with revenue and are included in the calculation of the revenue conversion factor. Income tax expense items are allocated to schedules by net income before income tax adjusted by interest expense.

For the functional summaries on pages 2 and 3 of the cost of service study, these items are then assigned to component cost categories. The revenue related expense items have been reduced to a percent of all other costs and loaded onto each cost category by that ratio. Similarly, income tax items have been reduced to a percent of net income before tax then assigned to cost categories by relative rate base (as is net income).

The following matrix outlines the methodology applied in the Company Base Case cost of service study.

Account	Functional Category	Classification	Allocation
<b>Production Plant</b>			
Thermal Production	P = Production	Demand/Energy by Thermal Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Hydro Production	P = Production	Demand/Energy by Hydro Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Other Production (Coyote Springs)	P = Production	Demand/Energy by Thermal Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Other Production	P = Production	Demand	D01 Coincident Peak Demand
<b>Transmission Plant</b>			
All Transmission	T = Transmission	Demand/Energy by Trans Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
<b>Distribution Plant</b>			
360 Land	D = Distribution	Demand	D02 Non-coincident Peak Demand
361 Structures	D = Distribution	Demand	D03/D04/D05 Direct Assign Large / Non-coincident Peak Demand Excl DA
362 Station Equipment	D = Distribution	Demand	D03/D04/D05 Direct Assign Large / Non-coincident Peak Demand Excl DA
364 Poles Towers & Fixtures	D = Distribution	Demand	D06/D07/D08 Non-coincident Peak Demand Primary / Secondary / Direct Assign Lights
365 Overhead Conductors & Devices	D = Distribution	Demand	D06/D08 Non-coincident Peak Demand Primary / Secondary
366 Underground Conduit	D = Distribution	Demand	D06/D08 Non-coincident Peak Demand Primary / Secondary
367 Underground Conductors & Devices	D = Distribution	Demand	D06/D08 Non-coincident Peak Demand Primary / Secondary
368 Line Transformers	D = Distribution	Demand	D06 Non-coincident Peak Demand Secondary only
369 Services	D = Distribution	Customer	C02 Secondary Customers unweighted Excl Lighting
370 Meters	D = Distribution	Customer	C04 Customers weighted by Current Typical Meter Cost
373 Street and Area Lighting Systems	D = Distribution	Customer	C05 Direct Assignment to Street and Area Lights
<b>General Plant</b>			
All General	P/T/D	Demand/Energy/Customer as in related Labor or Plant	S22/S05/S21 Labor O&M Total, P/T/D Plant Total, Labor P/T/D O&M Subtotal
<b>Intangible Plant</b>			
301 Organization	P/T/D/G	Demand/Energy/Customer as in related Plant	S06 Sum of Production, Transmission, Distribution, and General Plant
302 Franchises & Consents	P = Production	Demand/Energy by Hydro Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
303 Misc Intangible Plant - Transmission Agreements	T = Transmission	Demand/Energy by Trans Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
303 Misc Intangible Plant - Software	P/T/D/G	Demand/Energy/Customer as in related Plant	S06 Sum of Production, Transmission, Distribution, and General Plant
<b>Reserve for Depreciation/Amortization</b>			
Intangible	P/T/D/G	Follows Related Plant	S01/S02/S06 Sum of Production Plant / Sum of Transmission Plant / P/T/D/G Total
Production	P = Production	Follows Related Plant	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Transmission	T = Transmission	Follows Related Plant	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Distribution	D = Distribution	Follows Related Plant	D02/D03/D04/D05/D06/D07/D08/C02/C04/C05 - See Related Plant
General	P/T/D	Demand/Energy/Customer as in related Labor or Plant	S22/S05/S21 Labor O&M Total, P/T/D Plant Total, Labor P/T/D O&M Subtotal
<b>Other Rate Base</b>			
252 Customer Advances for Construction	D = Distribution	Customer	S13 Sum of Account 369 Services Plant
282/190 Accumulated Deferred Income Tax	P/T/D/O by Plant Balances	Follows Related Plant	S01/S02/S03/S04 Sums of Production / Transmission / Distribution / General Plant
Gain on Sale of General Office Building	P/T/D	Demand/Energy/Customer from Plant	S04 Sum of General Plant
Net Settlement Exchange Power	P = Production	Energy	E02 Annual Generation Level Consumption
Net PGE Monetization	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
<b>Production O&amp;M</b>			
Thermal	P = Production	Demand/Energy by Thermal Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Thermal Fuel (501)	P = Production	Energy	E02 Annual Generation Level Consumption
Hydro	P = Production	Demand/Energy by Hydro Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Water for Power (536)	P = Production	Energy	E02 Annual Generation Level Consumption



Account	Functional Category	Classification	Allocation
<b>Production O&amp;M continued</b>			
Other (Coyote Springs)	P = Production	Demand/Energy by Thermal Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Other Fuel (547)	P = Production	Energy	E02 Annual Generation Level Consumption
Other	P = Production	Demand	D01 Coincident Peak Demand
Purchased Power and Other Expenses (555 and 557)	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
System Control & Misc (556)	P = Production	Energy	E02 Annual Generation Level Consumption
<b>Transmission O&amp;M</b>			
All Transmission	T = Transmission	Demand/Energy by Trans Peak Credit	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
<b>Distribution O&amp;M</b>			
580 OP Super & Engineering	D = Distribution	Demand/Customer from Other Dist Op Exp	S16 Sum of Other Distribution Operating Expenses
581 Load Dispatching	D = Distribution	Demand	D02 Non-coincident Peak Demand
582 Station Expenses	D = Distribution	Demand	S09 Sum of Account 362 Station Equipment
583 Overhead Lines	D = Distribution	Demand	S10 Sum of Accounts 364 and 365 Poles, Towers, Fixtures & Overhead Conductors
584 Underground Lines	D = Distribution	Demand	S11 Sum of Accounts 366 and 367 Underground Conduit & Underground Conductors
585 Street Lights	D = Distribution	Customer	S15 Sum of Account 373 Street Light and Signal Systems
586 Meters	D = Distribution	Customer	S14 Sum of Account 370 Meters
587 Customer Installations	D = Distribution	Customer	S13 Sum of Account 369 Services
588 Misc Operating Expense	D = Distribution	Demand/Customer from Other Dist Op Exp	S16 Sum of Other Distribution Operating Expenses
589 Rents	D = Distribution	Demand	D02 Non-coincident Peak Demand
590 MT Super & Engineering	D = Distribution	Demand/Customer from Other Dist Mt Exp	S17 Sum of Other Distribution Maintenance Expenses
591 MT of Structures	D = Distribution	Demand	S08 Sum of Account 361 Structures & Improvements
592 MT of Station Equipment	D = Distribution	Demand	S09 Sum of Account 362 Station Equipment
593 MT of Overhead Lines	D = Distribution	Demand	S10 Sum of Accounts 364 and 365 Poles, Towers, Fixtures & Overhead Conductors
594 MT of Underground Lines	D = Distribution	Demand	S11 Sum of Accounts 366 and 367 Underground Conduit & Underground Conductors
595 MT of Line Transformers	D = Distribution	Demand	S12 Sum of Account 368 Line Transformers
596 MT of Street Lights	D = Distribution	Customer	S15 Sum of Account 373 Street Light and Signal Systems
597 MT of Meters	D = Distribution	Customer	S14 Sum of Account 370 Meters
598 Misc Maintenance Expense	D = Distribution	Demand/Customer from Other Dist Mt Exp	S17 Sum of Other Distribution Maintenance Expenses
<b>Customer Accounts Expenses</b>			
901 Supervision	C = Customer Relations	Customer	S18 Sum of Other Customer Accounts Expenses Excluding Uncollectibles
902 Meter Reading	C = Customer Relations	Customer	C03 Customers Weighted by Estimated Meter Reading Time
903 Customer Records & Collections	C = Customer Relations	Customer	C01/C06 All Customers unweighted / Direct Assign Handbilled Cust
904 Uncollectible Accounts	R = Revenue Conversion	Revenue	R01 Retail Sales Revenue
905 Misc Cust Accounts	C = Customer Relations	Customer	C01 All Customers unweighted
<b>Customer Service &amp; Info Expenses</b>			
907 Supervision	C = Customer Relations	Customer	C01 All Customers unweighted
908 Customer Assistance	C = Customer Relations	Customer	C01 All Customers unweighted
909 Advertising	C = Customer Relations	Customer	C01 All Customers unweighted
910 Misc Cust Service & Info	C = Customer Relations	Customer	C01 All Customers unweighted
<b>Sales Expenses</b>			
911 - 916	C = Customer Relations	Energy	E02 Annual Generation Level Consumption

WUTC Cocket No. UE-05 Methodology Matrix  
 Avista Utilities Washington Jurisdiction  
 Electric Cost of Service Methodology

Account	Functional Category	Classification	Allocation
<b>Admin &amp; General Expenses</b>			
920 - 926 & 930 - 935 Assigned to Production	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
920 - 926 & 930 - 935 Assigned to Transmission	T = Transmission	Demand/Energy from Transmission Plant	S02 Sum of Transmission Plant
920 - 926 & 930 - 935 Assigned to Distribution	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
920 - 926 & 930 - 935 Assigned to Customer Relations	C = Customer Relations	Customer	C01 All Customers unweighted
Other 920-923, 928-931 Salaries, supplies, etc	P/T/D	Demand/Energy/Customer from O&M Expenses	S19 Sum of expenses excluding Purch Power, Fuel, Wheeling, Uncollectibles, Tariff Rider
924 Property Insurance	P/T/D	Demand/Energy/Customer from Plant	S06 Sum of Production, Transmission, Distribution, and General Plant
Other 925-926 Inj & Dam, Pensions & Benefits	P/T/D	Demand/Energy/Customer from Labor O&M Total	S22 Sum of Labor O&M Expenses
928 FERC Commission Fees	P = Production	Revenue	E02 Annual Generation Level Consumption
927,928 Franchise Fees, WUTC Commission Fees	R = Revenue Conversion	Revenue	R01 Retail Sales Revenue
935 Maintenance of General Plant	P/T/D	Demand/Energy/Customer from Plant	S04 Sum of General Plant
<b>Depreciation &amp; Amortization Expense</b>			
Intangible	P/T/D/G	Demand/Energy/Customer as in related Plant	S01/S02/S06 Sum of Production Plant / Sum of Transmission Plant / Sum of P/T/D/G Plant
Production	P = Production	Demand/Energy as in related Plant	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Transmission	T = Transmission	Demand/Energy as in related Plant	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Distribution	D = Distribution	Demand/Customer as in related Plant	D02/D03/D04/D05/D06/D07/D08/C02/C04/C05 - See Related Plant
General	P/T/D	Demand/Energy/Customer as in related Labor or Plant	S22/S05/S21 Labor O&M Total, P/T/D Plant Total, Labor P/T/D O&M Subtotal
<b>Taxes</b>			
Property Tax	P/T/D/O	Demand/Energy/Customer from Related Plant	S01/S02/S03/S04 Sums of Production / Transmission / Distribution / General Plant
State kWh Generation Taxes	P = Production	Demand/Energy by Combo Peak Credits & Energy	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Misc Production Taxes	P = Production	Demand/Energy by Combo Peak Credits & Energy	D01/E02 Coincident Peak Demand/Annual Generation Level Consumption
Misc Distribution Taxes	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
Washington State Excise Tax	R = Revenue Conversion	Revenue	R01 Retail Sales Revenue
Federal Income Taxes - Current and/or Deferred	R = Revenue Conversion	Revenue	R03 Revenue less Expenses Before Income Tax less Interest Expense
<b>Other Income Related Items</b>			
Settlement Exchange Power	P = Production	Energy	E02 Generation Level Consumption
PGE Monetization Amortization	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
<b>Operating Revenues</b>			
Sales of Electricity- Retail	R = Revenue from Rates	Revenue	Input Pro Forma Revenue per Revenue Study
Sales for Resale (447)	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
Special Contract (Standby) Revenue	P = Production	Demand	D01 Coincident Peak Demand
Misc Service Revenue (451)	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
Sales of Water & Water Power (453)	P = Production	Demand	D01 Coincident Peak Demand
Rent from Production Property (454)	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
Rent from Distribution Property (454)	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
Other Electric Revenues - Generation (456)	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
Other Electric Revenues - Wheeling (456)	T = Transmission	Demand/Energy from Transmission Plant	S02 Sum of Transmission Plant
Other Electric Revenues - Energy Delivery (456)	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
<b>Salaries &amp; Wages (allocators)</b>			
<b>Operation &amp; Maintenance Expenses</b>			
Production Total	P = Production	Demand/Energy from Production Plant	S01 Sum of Production Plant
Transmission Total	T = Transmission	Demand/Energy from Transmission Plant	S02 Sum of Transmission Plant
Distribution Total	D = Distribution	Demand/Customer from Distribution Plant	S03 Sum of Distribution Plant
Customer Accounts Total	C = Customer Relations	Customer	S18 Sum of Other Customer Accounts Expenses Excluding Uncollectibles
Customer Service Total	C = Customer Relations	Customer	C01 All Customers unweighted
Sales Total	C = Customer Relations	Energy	E02 Annual Generation Level Consumption
Admin & General Total	P/T/D	Demand/Energy/Customer from Related Plant	S05 Sum of Production, Transmission and Distribution Plant