

**BONNEVILLE POWER ADMINISTRATION**  
**TRANSMISSION BUSINESS LINE**

**2002 INITIAL PROPOSAL**  
**TRANSMISSION RATE STUDY**

**March 2000**

**TR-02-E-BPA-03**



**TRANSMISSION RATE STUDY**  
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## COMMONLY USED ACRONYMS

AC	Alternating Current
ACS	Ancillary Services and Control Area Services (Rate)
AF	Advance Funding (Rate)
AFUDC	Allowance for Funds Used During Construction
AGC	Automatic Generation Control
aMW	Average Megawatt
ASC	Average System Cost
BOR	U.S. Bureau of Reclamation
BPA	Bonneville Power Administration
Btu	British Thermal Unit
CA	Control Area
CAISO	California Independent System Operator
California PX	California Power Exchange
CAS	Control Area Service
COB	California-Oregon Border
COE	U.S. Army Corps of Engineers
CPTC	Columbia Power Trades Council
CRAC	Cost Recovery Adjustment Clause
CSL	Customer-Served Load
CY	Calendar Year (Jan-Dec)
DC	Direct Current
DOE	Department of Energy
DOI	Department of Interior
DSIs	Direct Service Industrial Customers
EIA	Energy Information Administration
Energy Northwest	Formerly Washington Public Power Supply System Project
F&O	Financial and Operating Reports
FCCF	Fish Cost Contingency Fund
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FERC	Federal Energy Regulatory Commission
FPT	Formula Power Transmission Rate
FTE	Full-time Equivalent
FY	Fiscal Year (Oct-Sep)
GDP	Gross Domestic Product
GI	Generation Integration
GRSPs	General Rate Schedule Provisions
GSU	Generator Step-Up Transformers
GTA	General Transfer Agreement
GWh	Gigawatthour
HLH	Heavy Load Hours
HNF	Hourly Non-Firm

IDC	Interest During Construction
IE	Eastern Intertie (Rate)
IM	Montana Intertie (Rate)
IOUs	Investor-Owned Utilities
IP	Industrial Firm Power (Rate)
IR	Integration of Resources (Rate)
IS	Southern Intertie (Rate)
ISC	Investment Service Coverage
ISO	Independent System Operator
kcf/s	kilo (thousands) of cubic feet per second
kV	Kilovolt (1000 volts)
kVAr	Kilovoltampere Reactive
kW	Kilowatt (1000 watts)
kWh	Kilowatthour
LLH	Light Load Hours
m/kWh	Mills per kilowatthour
MAF	Million Acre Feet
MORC	Minimum Operating Reliability Criteria
MTPL	Monthly Transmission Peak Load
MW	Megawatt (1 million watts)
MWh	Megawatthour
NCD	Network Contract Demand (Service and Rate)
NERC	North American Electric Reliability Council
NF	Nonfirm Energy
NOB	Nevada-Oregon Border
NORM	Non-Operating Risk Model
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NT	Network Integration Transmission (Service and Rate)
NTSA	Non-Treaty Storage Agreement
NWPP	Northwest Power Pool
NWPPC	Northwest Power Planning Council
O&M	Operation and Maintenance
OASIS	Open Access Same-Time Information System
OATT	Open Access Transmission Tariff
OMB	Office of Management and Budget
OY	Operating Year (Aug-Jul)
PA	Public Agency
PBL	Power Business Line
PNCA	Pacific Northwest Coordination Agreement
PNRR	Planned Net Revenues for Risk
PNUCC	Pacific Northwest Utilities Conference Committee
PNW	Pacific Northwest
POD	Point of Delivery
POI	Point of Integration (or, Interconnection)

POR	Point of Receipt
PSW	Pacific Southwest
PTP	Point to Point (Service and Rate)
PUD	Public or People's Utility District
Reclamation	Bureau of Reclamation
RiskMod	Risk Analysis Model (computer model)
RiskSim	Risk Simulation Model
RMS	Remote Metering System
ROD	Record of Decision
RPSA	Residential Purchase Sale Agreement
RRS	Revenue Requirement Study
RTO	Regional Transmission Organization
SCADA	Supervisory Control And Data Acquisition System
Tariff	Open Access Transmission Tariff
TBL	Transmission Business Line
TCH	Transmission Contract Holder
TGT	Townsend-Garrison Transmission (Rate)
TPP	Treasury Payment Probability
TRAP	Transmission Risk Analysis Processor
TRS	Transmission Rate Study
TTSL	Total Transmission System Loading
UIC	Unauthorized Increase Charge
UFT	Use of Facilities (Rate)
USBOR	U.S. Bureau of Reclamation
VOR	Value of Reserves
WEFA	Wharton Econometric Forecasting Associates
WSCC	Western Systems Coordinating Council
WSPP	Western System Power Pool
1CP	One Coincidental Peak
12CP	Twelve Coincidental Peak



1                   **1. INTRODUCTION**

2                   **1.1      Purpose**

3       The Transmission Rate Study (TRS) presents an overview of the Bonneville Power  
4       Administration (BPA) Transmission Business Line (TBL) rate design process for  
5       developing the proposed transmission and ancillary service rates. The end result of the  
6       TRS is the transmission and ancillary service rate schedules and associated General  
7       Rate Schedule Provisions (GRSP) that are published in the Transmission and Ancillary  
8       Service Rate Schedules and General Rate Schedule Provisions (TR-02-E-BPA-04). A  
9       summary of the proposed rates is shown in Table 13.

10  
11      TBL proposes to set transmission rates for a two year rate period -- Fiscal Years (FYs)  
12      2002 and 2003. (A fiscal year runs from October 1 through September 30.) A two-year  
13      rate period recognizes that the region is working toward establishing a Regional  
14      Transmission Organization pursuant to Federal Energy Regulatory Commission  
15      Order 2000. Beginning October 1, 2001, all customers will purchase new transmission  
16      service under the Open Access Transmission Tariff (Tariff). TBL is revising the Tariff  
17      to include three services: Network Integration (NT), Point-to-Point (PTP), and the new  
18      Network Contract Demand (NCD) service.

19  
20      The overall level and design of transmission rates is governed by BPA's statutory  
21      obligations, commitment to comparability, contractual arrangements, the resolution of  
22      interbusiness line issues, and the consideration of other factors such as revenue stability,

1 rate continuity, and ease of administration. The TRS first briefly discusses some of  
2 these factors and then discusses the methodology used to develop the rates.

3

4 **1.2 Overview of the Basis for Rate Development**

5 Factors influencing the level and design of transmission rates are statutory obligations,  
6 comparability, interbusiness line issues to be resolved in the 2002 Power Rate Case, and  
7 contractual arrangements.

8

9 **1.2.1 Statutes**

10 In accordance with section 4 of the Federal Columbia River Transmission System Act  
11 (Transmission System Act), BPA constructs, operates, and maintains the Federal  
12 Columbia River Transmission System (FCRTS) to: (a) integrate and transmit electric  
13 power from existing or additional Federal or non-Federal generating units; (b) provide  
14 service to BPA customers; (c) provide interregional transmission facilities; and  
15 (d) maintain the electrical stability and reliability of the Federal system.

16 16 U.S.C. §838b.

17

18 BPA's transmission rates are established in accordance with sections 9 and 10 of the  
19 Transmission System Act (16 U.S.C. §§838g and h), section 5 of the Flood Control  
20 Act of 1944 (16 U.S.C. §825s), and the provisions of section 7 of the Pacific  
21 Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power  
22 Act). 16 U.S.C. §839e. Section 7(a)(2)(C) of the Northwest Power Act requires that  
23 BPA "... equitably allocate the costs of the Federal transmission system between

1      Federal and non-Federal power utilizing such system." 16 U.S.C. §839e(a)(2)(C).  
2      Some of BPA's transmission rates are also prepared in accordance with section  
3      212(i)(1)(b)(ii) of the Federal Power Act, as amended by the Energy Policy Act of  
4      1992, Pub. L. No. 102-486, 106 Stat. 2776. 16 U.S.C. §824k(i)(1)(B)(ii).

5

6      **1.2.2 Comparability**

7      In the Energy Policy Act of 1992 (EPA'92), Congress approved amendments to  
8      sections 211 and 212 of the Federal Power Act that allow the Federal Energy  
9      Regulatory Commission (FERC) to order access to utility transmission systems,  
10     including the FCRTS. 16 U.S.C. §§824j and 824k(i)(1). Since passage of EPA'92,  
11     FERC has developed standards for providing comparable access to transmission  
12     services. *American Electric Power Service Corp.*, 64 F.E.R.C. ¶61,279 (1993), *reh'g*  
13     granted, 67 F.E.R.C. ¶61,168, *clarified*, 67 F.E.R.C. ¶61,317 (1994). "Comparable"  
14     refers to FERC's standard for determining whether access to transmission services is  
15     unduly discriminatory or anticompetitive. The analysis focuses on a determination of  
16     whether the transmitting utility is offering third parties access to its transmission  
17     facilities with the same or comparable terms and conditions, and at the same or  
18     comparable rates, that the utility uses for itself. *Id.* at 61,490.  
19  
20     FERC also issued a transmission pricing policy as a further action to address a more  
21     competitive electric industry. *Inquiry Concerning the Commission's Pricing Policy for*  
22     *Transmission Services Provided by Public Utilities Under the Federal Power Act;*  
23     *Policy Statement*, 59 Fed. Reg. ¶55,301, FERC Stats. & Regs. ¶31,005 (1994)

1 (Transmission Pricing Policy). See also 69 F.E.R.C. ¶61,086 (1994). The Transmission  
2 Pricing Policy is based on the premise that access to transmission services at  
3 comparable prices is critical to the development of competitive wholesale power  
4 markets.

5

6 On April 24, 1996, FERC issued its final rule *Promoting Wholesale Competition*  
7 *Through Open Access Non-discriminatory Transmission Services by Public Utilities;*  
8 *Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, 61 Fed. Reg.  
9 21,540, FERC Stats. & Regs. ¶31,036 (1996) (Order 888). In Order 888, FERC  
10 requires all transmission-owning public utilities subject to FERC jurisdiction to file  
11 non-discriminatory open access transmission tariffs. Order 888 also requires  
12 jurisdictional utilities to take transmission service, including ancillary services, for their  
13 own new wholesale electric sales and purchases under the open access tariffs. *Id.* at  
14 21,552. While Order 888, by its terms, does not apply directly to BPA, FERC declared  
15 its intention to apply the policies announced therein as broadly as possible through  
16 sections 211 and 212 of the Federal Power Act, to promote a national policy of open  
17 transmission access. *Id.* at 21,573. BPA has determined it will comply with Order 888  
18 to the extent it is compatible with existing legislative authority.

19

20 In a process concurrent with the 2002 transmission rate case, TBL has proposed terms  
21 and conditions of general applicability for open access transmission service, including  
22 Network Integration service, Point-to-Point service, and the new Network Contract  
23 Demand service. TBL's tariff is modeled on the FERC *pro forma* tariff. In conjunction

1 with the proposed open access transmission services, TBL proposes the Network  
2 Integration (NT) rate, Point-to-Point (PTP) rate, Network Contract Demand (NCD) rate,  
3 Southern Intertie (IS) rate, and Montana Intertie (IM) rate. TBL also proposes the  
4 Ancillary Services and Control Area Services (ACS) rate. In addition, the Integration  
5 of Resources (IR) rate and the Formula Power Transmission (FPT) rates are proposed  
6 for pre-Tariff firm wheeling contracts.

7

### 8   **1.2.3 Interbusiness Line Issues**

9 Certain issues that affect the transmission and ancillary service rates are being decided  
10 in the 2002 Power Rate Case. These issues are: a methodology for functionalizing  
11 costs between generation and transmission, including a methodology for  
12 functionalizing corporate overhead costs to the business lines; unit costs for generation  
13 inputs for operating reserves and regulation ancillary services; the generation input  
14 cost for reactive supply and voltage control from generation sources; the generation  
15 costs of station service and remedial action schemes; and the allocation of generation  
16 integration and generator step-up transformer costs to the business lines. Also being  
17 decided in the Power Rate Case is a treatment for costs over third-party transmission  
18 systems (General Transfer Agreements or their replacement) for the delivery of  
19 Federal and non-Federal power, and the Power Business Line's (PBL's) financial  
20 support of the Delivery Charge. In calculating the proposed transmission and ancillary  
21 services rates, TBL has relied upon the applicable sections of the 2002 Power Rate  
22 Case Initial Proposal. The final transmission rate proposal will reflect the  
23 Administrator's decisions in the final power rates Record of Decision.

1    **1.2.4 Contractual Arrangements**

2    TBL and its customers enter into transmission agreements that can affect the  
3    transmission rates charged customers. Transmission agreements negotiated prior to  
4    the Transmission System Act reflect conditions and policies prevalent at the time of  
5    negotiation. For example, some agreements to which the Formula Power  
6    Transmission (FPT) rate applies specify that transmission rates can be changed  
7    annually, while other agreements limit rate adjustments to once every 3 years. TBL  
8    will honor these agreements when setting and applying the new transmission rates.

1                   **2. TRANSMISSION RATE METHODOLOGY**

2                   **2.1      Rate Construct**

3       TBL proposes to set the PTP rate, the IR rate, and the NT Base Charge equal to each  
4       other, and to set the new NCD rate at the same level. This rate generally will be  
5       referred to as the "Base Charge." The FPT rate is not included in this construct because  
6       of its different rate design. Network cost, net of FPT revenues, is used to calculate the  
7       Base Charge using a one coincidental peak (1CP) method. The Network cost remaining  
8       after setting the Base Charge is the basis for the NT Load Shaping Charge.

9  
10      In the calculation of Network and Intertie rates, TBL forecasts transmission sales under  
11     each service. The Power Business Line (PBL) uses the transmission system under Open  
12     Access service agreements. PBL use is forecasted in the same manner as for all other  
13     transmission customers. Firm PTP contract demands are assigned to PBL's  
14     grandfathered sales and exchanges, consistent with current treatment of these bundled  
15     contracts.

16  
17                   **2.2      Cost**

18      BPA determines a transmission revenue requirement that is divided among identified  
19     segments of the FCRTS. The Segmentation Study (TR-02-E-BPA-02) identifies the  
20     transmission facilities and associated investment and O&M cost for each transmission  
21     segment and, thus, provides a basis for segmenting the revenue requirement. The  
22     Revenue Requirement Study (TR-02-E-BPA-01) determines the test period revenue

1 requirement for transmission and ancillary services. From that, the revenue  
2 requirement for each segment is determined.

3

4 **2.2.1 Segmentation Study**

5 TBL operates and maintains the FCRTS to provide transmission services throughout the  
6 Pacific Northwest (PNW) region. Because many services do not require the use of the  
7 entire system, the Segmentation Study categorizes the facilities of the FCRTS according  
8 to the types of services they provide. The Segmentation Study produces the segmented  
9 historical FCRTS investment base and the segmented averages of the last 3 years' actual  
10 operations and maintenance (O&M) expenses for the transmission segments. The  
11 Study also provides the historical investment base and test year O&M associated with  
12 ancillary services. This provides the basis for segmenting the revenue requirements  
13 used to develop rates. Corps of Engineers (COE) and Bureau of Reclamation (USBR)  
14 transmission facilities are not included in the Segmentation Study. Instead, COE and  
15 USBR Network and Delivery transmission costs are included in the PBL revenue  
16 requirements and charged to the TBL through interbusiness line transfers.

17

18 In the Segmentation Study, the FCRTS is divided into six transmission segments:  
19 (1) Network (or, Integrated Network); (2) Southern Intertie; (3) Eastern Intertie;  
20 (4) Generation Integration; (5) Utility Delivery; and (6) Direct Service Industry (DSI)  
21 Delivery. The Utility Delivery and DSI Delivery segments include facilities with  
22 voltages below 34.5 kV.

1    **2.2.2 Revenue Requirement Study**

2    In compliance with the FERC order dated January 27, 1984 (26 F.E.R.C. ¶61,096  
3    (1984)), BPA determines separate revenue requirements for the generation and  
4    transmission functions of the FCRPS. The Revenue Requirement Study for  
5    transmission is prepared consistent with BPA's statutory obligation to set rates to  
6    recover, in accordance with sound business principles, all costs of transmitting electric  
7    power, including the repayment of the Federal investment in the FCRTS over a  
8    reasonable number of years, and all other FCRTS costs.

9  
10   The process used to develop each revenue requirement consists of three parts. First,  
11   repayment studies are prepared for the transmission function to determine the projected  
12   annual interest expense and amortization of the Federal investment. These studies are  
13   conducted for the rate test period and extend through the repayment period. Second,  
14   projections of annual operating expenses of the FCRPS are compiled. Third, planned  
15   net revenues determined by the Administrator's financial objectives are calculated and  
16   added to the operating and net interest expense.

17  
18   Thus, transmission revenue requirements are set at levels sufficient to meet the annual  
19   operating expenses of the FCRTS, to cover interest expense, and to recover planned net  
20   revenues that ensure BPA's ability to make annual amortization payments on the Federal  
21   investment as determined by the transmission repayment studies. The segmented  
22   transmission revenue requirements for FYs 2002 and 2003 are shown in Table 1.

1    **2.2.2.1 General Transfer Agreement (GTA) Cost**

2    The revenue requirement includes a cost item for “General Transfer Agreements for  
3    nonfederal power.” *See* Table 1, lines 1.11 and 1.28. In the 2002 Power Rate Case  
4    Initial Proposal, the TBL proposed to pay up to \$6.5 million annually to acquire  
5    Network-equivalent transmission for the non-Federal power purchases of GTA  
6    customers and to roll this cost into the Network. TBL forecasts this cost to be  
7    \$4.365 million per year. *See* Appendix H for the GTA cost forecast.

8

9    **2.2.3 Revenue Credits and Cost Adjustments**

10   The segmented transmission revenue requirement is adjusted for revenue credits to  
11   arrive at the segment costs used to set the adjustable transmission rates (referred to in  
12   the TRS tables as “rate development costs”). Expected revenues from various sources  
13   are identified and segmented in Table 2. These revenue credits are transmission  
14   revenues from sources other than the general transmission rates developed in the TRS.

15

16   The segmented revenue credits are subtracted from the appropriate segment revenue  
17   requirement before costs are allocated. *See* Table 3. Two additional adjustments are  
18   made to the revenue requirement to determine the “rate development costs” used to  
19   calculate the adjustable rates. The net cost of the Eastern Intertie is allocated and the  
20   stability reserves credit is calculated and allocated. The net cost of the Eastern Intertie  
21   equals the Eastern Intertie revenue requirement less the expected revenues from the  
22   Townsend-Garrison Transmission rate. The net cost is allocated to the remaining  
23   segments based on net plant in each segment.

1 Table 3 also shows the calculation of the stability reserves credit of \$0.496 million per  
2 year. The DSIs IR and PTP contracts provide for a credit to be given to DSIs for TBL's  
3 right to instantaneously disconnect DSIs loads from the electrical power system using a  
4 high-speed load-tripping scheme known as the Import Contingency Load Tripping  
5 Scheme. This system protects against Southern Intertie outages when the Intertie is used  
6 to import power into the PNW. The credit is a formula rate based on the change in the  
7 Industrial Firm Power (IP) rate. The stability reserves reservation fee currently in effect  
8 is applied to forecasted DSIs transmission demand for smelter loads. The rate will be  
9 updated for the final transmission rate proposal based on the final proposed 2002 IP rate.  
10 The cost of providing the stability reserves credit is segmented to the Southern Intertie.  
11  
12 Finally, the Generation Integration segment is comprised of transmission facilities that  
13 integrate Federal resources to the Network. The cost of the Generation Integration  
14 segment, \$7.676 million per year (Table 3, column A, line 3.15), is assigned wholly to  
15 the PBL and recovered through power rate charges, as proposed in the 2002 Power Rate  
16 Case Initial Proposal.

17

### 18     **2.3     Loads**

19 Transmission loads on the Network and Southern Intertie are forecast using contract  
20 demands in long-term contracts, point of delivery load forecasts for NT service, and  
21 FY 1998 and 1999 short-term sales. The load forecasts are shown on Tables 4 and 5.  
22 For the forecast of Network and Southern Intertie loads, TBL first determined current  
23 contract demands that are effective through the FY 2002 and 2003 rate period. Then,

1 for the Network, TBL forecasted which Network service(s) it expects will be used by  
2 the remaining customers. For rate development purposes, it is important to forecast  
3 whether the customer will purchase a contract demand service where the billing factor  
4 is a contractually specified demand, or the NT load-based service where the billing  
5 factor is based on customer's load.

6

7 Customers have a number of choices with regard to Network transmission service and  
8 have options to switch their current service to a Tariff service. With the addition of  
9 NCD service, TBL will have five long-term firm services on the Network. The  
10 proposed Tariff provides a window to allow customers to convert their current service  
11 to any Tariff service (PTP, NCD, NT). In addition to the conversion option, customers  
12 who are currently taking transmission service under their 1981 power sales contracts, or  
13 whose existing PTP, IR, FPT, or NT agreements are expiring before October 1, 2001,  
14 must select a Network service.

15

### 16 **2.3.1 Sales from Long-Term Contracts**

17 Long-term Network and Southern Intertie transmission demands are shown in Table 4.  
18 The demands for FPT, IR and PTP on the Network and Southern Intertie reflect current  
19 contracts that are effective during the forecast period. Two PTP contracts that expire in  
20 FY 2001 were assumed to extend through the rate period. PTP service on the Network  
21 and Southern Intertie is shown separately for PBL grandfathered contracts and for all  
22 other PTP service agreements.

23

1 For the customers that are not covered by a current long-term contract, loads and  
2 revenues are forecasted for both NT and NCD service in order to determine which  
3 service the customer would likely take. *See* section 2.3.1.1, Network Rate Choice.  
4 Non-generating public utility load forecasts are based on an analysis of recent history.  
5 Appendix D describes the non-generating public utility load forecast methodology and  
6 provides a list of the utilities that this method was used for. The forecasted non-  
7 generating utility monthly loads coincident with TBL's monthly system peak are the  
8 NT Load Shaping Charge billing determinants. These same monthly loads, adjusted  
9 for Customer Served Load (CSL), are the NT Base Charge billing determinants. Load  
10 served under IR, FPT, and PTP contracts is considered to be CSL. NCD demands are  
11 forecast to be each utility's highest forecasted monthly demand after adjustment for  
12 load served under IR, FPT, and PTP contracts. The IR, FPT, and PTP contract  
13 demands subtracted from the non-generating public utility's system load to forecast  
14 NCD and NT Base Charge billing determinants are taken from Appendix A.

15  
16 The generating public utility forecast is based on load information contained in the  
17 Northwest Power Pool's Operating Program, December 1998, or the Pacific Northwest  
18 Loads and Resources Study (White Book), December 1998. The forecasted billing  
19 determinants for generating public utilities under the NT Base Charge and NCD rate  
20 exclude service to the customer's load that is served by internal generation or under IR,  
21 FPT, or PTP contracts. Appendix D, Table 2 contains generating public utility  
22 forecasted system loads and other information used to forecast billing determinants  
23 under both NT and NCD services, and to estimate internal generation. The contract

1 demands subtracted from the generating public utility's system load to forecast NCD  
2 and NT Base Charge billing determinants are taken from Appendix A.

3

4 **2.3.1.1 Network Rate Choice**

5 The selection of Network transmission service for most customers is forecast from an  
6 analysis that determines the customer's least costly service. In general, a contract  
7 demand service (PTP or NCD) is less expensive for utilities with high load factors and  
8 little diversity from the total transmission system peak. NT service costs less than  
9 contract demand service for low load factor customers with system peaks that differ  
10 from the overall transmission system peak. For cost allocation purposes, it is  
11 important to distinguish between NT and contract demand service. However, PTP and  
12 NCD services are treated the same for cost allocation purposes. The forecast of  
13 customers' Network service is shown in Appendix E, Column B.

14

15 Nine transmission customers are assigned a Network service without regard to the  
16 results of the "choice analysis." Their assignment is based on information from the  
17 customer directly or from the customer's transmission account executive. Fairchild Air  
18 Force Base, the City of Heyburn, and Port Townsend Paper are modeled as NT  
19 customers; Eugene Water and Electric Board and Tacoma City Light are modeled as  
20 NCD customers; and Douglas PUD, Grant PUD, and Klickitat PUD are modeled as  
21 PTP customers for network rate determination. Additionally, all PNGC utilities are  
22 assumed to take NT service.

1 Seattle City Light and Snohomish County PUD are shown as NCD customers in  
2 Table 4 even though they have PTP contracts that extend through the 2002 rate period.  
3 The assumption of NCD service is based on these utilities' interest in purchasing the  
4 Slice of the System power product offered by the PBL and the suitability of NCD  
5 service in handling an excess of resources over load.

6

7 **2.3.2 Short-Term and Hourly Sales**

8 The forecast of short-term sales is shown in Table 5. Daily and hourly sales on the  
9 Network and Southern Intertie are forecast using an average of the latest two historical  
10 years, FY 1998 and FY 1999. Average 1998 and 1999 OASIS reservations of monthly,  
11 weekly, and daily sales are used as the basis of the forecasted FY 2002 and 2003 daily  
12 sales. The historical monthly, weekly, and daily sales are converted to the Block 1 (first  
13 5 days of a reservation) and Block 2 (day 6 and beyond of a reservation) sales to reflect  
14 the new rate structure. Hourly sales are taken directly from history for FY 1999 and  
15 from the excess of total schedules over total long-term plus short-term rights for  
16 FY 1998.

17

18 A downward adjustment is made to the forecast of short-term Southern Intertie sales to  
19 account for increases in long-term contract demands. Long-term contract demands on  
20 the Southern Intertie for the rate review period are 2.5 times what they were forecast in  
21 the 1996 rate case. Increases in long-term IS contract demands should result in a  
22 reduction of short-term sales. An amount equal to 44% of the increase in long-term IS  
23 contract demands between the FY 1998/1999 historical period and the forecast period

1 is subtracted from FY 1998/1999 short-term sales to yield the forecast of short-term IS  
2 sales. The reduction in short-term IS sales due to increased long-term sales is shown  
3 in Table 5, lines 5.19 and 5.26; Southern Intertie short-term sales are reduced in  
4 Table 8, line 8.10, to calculate the IS-02 rate. Forty-four percent reflects the estimated  
5 sensitivity of PBL's Southern Intertie short-term transmission purchases to changes in  
6 their long-term transmission purchases during FY 1998. Appendix D, Table D3 shows  
7 the summary statistics supporting this estimated relationship.

8

### 9     **2.3.3 Utility Delivery Loads**

10 The billing determinants for the Utility Delivery Charge are developed by point of  
11 delivery. The Delivery Charge is applicable to loads being served over Utility Delivery  
12 facilities at voltages below 34.5 kV. Appendix C shows the utilities and points of  
13 delivery forecasted to be subject to the Utility Delivery Charge. In addition to the  
14 substations already sold, the forecast assumes that customers will purchase additional  
15 substations during the remainder of the current rate period. All but two of the utilities  
16 appearing in Appendix C are non-generating publics. *See Appendix D for forecast*  
17 *information for the non-generating publics. Utility delivery points for Clark Public*  
18 *Utilities and Grant County PUD are estimated from recent billing information.*

19

### 20     **2.4 Rate Calculations**

21 The FPT rate is calculated first and forecasted FPT revenues are subtracted from  
22 Network costs. Network costs adjusted for FPT revenues are allocated to the remaining  
23 Network services using a 1CP cost allocation methodology. Table 11 shows the cost

1 allocation and calculation of the Base Charge for IR, NCD, PTP, and NT rates and the  
2 NT Load Shaping charge. The annual Base Charge is used to calculate PTP daily and  
3 hourly charges.

4

5 The Southern Intertie (IS) rate is based on Southern Intertie rate development cost  
6 and forecasted IS sales. The Montana Intertie (IM) rate is based on TBL's annual  
7 cost under the TGT rate, and the capacity of TBL's share of the facility. The IS and  
8 IM daily and hourly rates are calculated using the same methodology as that used for  
9 the PTP rate. The IS north-to-south rates are seasonally differentiated.

10

11 **2.4.1 FPT Rate Calculation**

12 The proposed FPT rate is calculated by increasing the 1996 FPT rates by a uniform  
13 percentage that reflects the increase in unit Network cost between the 1996 rate case  
14 and the 2002 rate case. *See Table 6.* The unit Network cost is calculated by dividing  
15 the Network cost by the Network use determined by a power flow analysis.

16

17 **2.4.1.1 FPT Network Costs**

18 To calculate the unit 1996 Network cost, the measure of Network costs from the 1996  
19 rate case is the 5-year average Network "rate development cost." 1996 Final  
20 Transmission Rate Design Study, WP-96-FS-BPA-06, Table 3, line 3.37. The measure  
21 of Network cost for the 2002 rate period includes two elements: average 2002/2003  
22 Network segment costs, and the portions of the revenue requirements of the two  
23 required Ancillary Services that are associated with Network use. Table 6, lines 6.6 -

1       6.9. The two required Ancillary Services associated with Network use are Scheduling,  
2       System Control and Dispatch Service and Reactive Supply and Voltage Control from  
3       Generation Sources Service. The Network-related Ancillary Services cost is  
4       determined by prorating each revenue requirement by the Network portion of each  
5       billing determinant.

6

7       **2.4.1.2 Network Use**

8       The forecast of annual transmission peak loading is the indicator of system use that is  
9       used to determine the Network unit cost. The transmission peak loading, the Total  
10      Transmission System Loading (TSSL), is the sum of power coming onto the TBL  
11      transmission system over connections with other control areas and from generation  
12      within the BPA Control Area. The TSSL is determined from a power flow study made  
13      for the winter peak hour of the test period. The power flows are simulations of peak  
14      load conditions for January 1997 and for January 2002. The January 1997 power flow  
15      was used to determine FPT Network flows in the 1996 rate case. The January 2002  
16      power flow is based on current data and is used to determine TSSL for the 2002 rate  
17      period. The TSSL determined from the January 1997 power flow is 29,394 MW, and  
18      the TSSL from the January 2002 power flow is 29,564 MW. Table 6, line 6.3.

19

20      Assumptions for the 1997 and 2002 power flow studies are consistent with assumptions  
21      used in past rate filings. Loads and resources for January 1997 are based on BPA's  
22      "1996 Pacific Northwest Loads and Resources Study" published in December 1995.  
23      Loads and resources for January 2002 are based on load and resources data available in

1 1999. Individual public agency load forecasts developed by the TBL are based on  
2 historical information. The forecasts for IOUs and large generating public utilities are  
3 provided by the utilities. All DSI loads are included at full operating levels. Updated  
4 load and generation forecasts are incorporated if available.

5

6 The power flow study incorporates the following load, resource operation, and  
7 transmission system conditions: normal winter interchange schedules between the  
8 Pacific Northwest and other regions; all large thermal generation plants scheduled to be  
9 available are assumed to be operating; hydro generation forecasts assume approximately  
10 median water conditions; and the transmission system is operated as planned, with all  
11 lines in service.

12

#### 13 **2.4.1.3 Calculation of the FPT Rate Components**

14 Table 6 shows the development of the scaling factor that is applied to the individual  
15 FPT-96 rate components to determine the FPT-02 rate. The unit Network cost  
16 calculated for the 1996 rate case is \$0.994/kW/month, and for the 2002 rate case is  
17 \$1.368/kW/month (line 6.10). The increase of the 2002 rate period unit cost over that  
18 for the 1996 rate period is 37.64% (line 6.11), which is applied to each FPT-96 rate  
19 component to calculate FPT-02 rates. The resulting FPT rate components are shown in  
20 Table 13.

1    **2.4.2 Network Rate Calculations**

2    After the FPT rate is calculated and revenue is forecasted, the remaining Network rates  
3    (IR, PTP, NCD, and NT) are calculated using a 1CP methodology. *See Table 7.* First,  
4    forecasted FPT revenues are subtracted from the Network rate development cost  
5    (Table 3) to calculate the costs to be recovered from the remaining Network rates  
6    (line 7.3). The Base Charge (IR, PTP, NCD, NT) of \$13.58/kW/year is calculated by  
7    dividing the adjusted Network cost by the sum of all forecasted Network sales: long-  
8    term and short-term, firm and nonfirm PTP demands; IR and NCD demands; and a 1CP  
9    measure of NT Base Charge demands. Short-term daily and hourly sales are the  
10   adjusted "rate design megawatts" addressed below.

11  
12   The daily Block 1 (first five days of a reservation) and Block 2 (day 6 and beyond of a  
13   reservation) rates, and the hourly rate are then calculated. The Block 1 daily rate is  
14   calculated by dividing the annual rate by 365 days and 5/7, and the Block 2 daily rate is  
15   calculated by dividing the annual rate by 365 days. The hourly rate is calculated by  
16   dividing the annual rate by the number of peak hours in the year (5 days per week,  
17   16 hours per day).

18  
19   The forecast of daily Block 1 sales and hourly sales on Table 5 are adjusted to calculate  
20   rates. The rates for short-term service are factored into the calculation of the annual  
21   contract demand rates by artificially increasing the short-term sales in the divisor. The  
22   calculation of these "rate design MWs" is shown in Table 7 (lines 7.11 and 7.13) for the  
23   Network (and Table 8 (lines 8.11 and 8.13) for the Southern Intertie). The forecasted

1 Block 1 daily sales are increased by 7/5 because the rate is 7/5 higher than it would be if  
2 the annual rate were simply divided by 365. Similarly, the hourly sales are multiplied by  
3 7/5 times 24/16ths.

4

5 These contract demand rates are then applied to forecasted sales. The resulting revenue  
6 is subtracted from the adjusted Network cost to determine the cost basis of the NT  
7 Transmission Load Shaping Charge. This remaining Network cost, \$16.671 million, is  
8 divided by the forecasted Load Shaping sales, 4,266 MW per year, to calculate the NT  
9 Load Shaping charge of \$0.326/kW/month.

10

11 **2.4.3 Intertie Rate Calculations**

12

13 **2.4.3.1 Southern Intertie Rate Calculation**

14 The IS-02 rate is seasonally differentiated for north-to-south use, with the winter rate set  
15 equal to 75% of the summer rate. The summer season is defined as April through  
16 September and the winter season is October through March. Table 8 shows the  
17 development of the IS rates. Appendix I shows the basis for the seasonal differentiation  
18 and describes the methodology used to set the IS rate. Rate development Southern  
19 Intertie costs are divided by all projected sales on the Federal portion of the Southern  
20 Intertie to compute the annual IS rate of \$13.88/kW/year, or \$1.157/kW/month. This  
21 rate is the basis for the South to North rate, which is not seasonally differentiated. Daily  
22 and hourly rates are computed using the same method used to calculate the PTP daily  
23 and hourly rates described in section 2.4.2.

1 To calculate the seasonal rates for North to South service, the first step is to subtract the  
2 revenues forecast for South to North sales (Table 8, line 8.20) from the adjusted  
3 Southern Intertie revenue requirement. In order to set the winter rate equal to 75% of the  
4 summer rate, the revenues from the winter rate (winter sales multiplied by the summer  
5 rate multiplied by 75%) plus revenues from summer sales at the summer rate must equal  
6 the net revenue requirement. The summer price is derived by dividing the net revenue  
7 requirement by the sum of all summer sales and 75% of winter sales (Table 8, line 8.25).  
8 The summer north-to-south rate is \$1.299/kW/month. Finally, winter rates are computed  
9 by taking 75% of the summer rate. The winter north-to-south rate is \$0.974/kW/month.  
10 The daily and hourly rates are computed using the same method described in  
11 section 2.4.2.

12

13 **2.4.3.2 Montana Intertie Rate Calculation**

14 The Montana Intertie rate for long-term service, \$14.87/kW/year, equals TBL's payment  
15 under the TGT rate for the Montana Intertie facilities divided by TBL's capacity  
16 allocation of 185 MW. The IM daily and hourly rates are calculated using the same  
17 method described in section 2.4.2. *See Table 9.*

1    **2.4.4 Eastern Intertie Rate Calculation**

2    The IE rate for nonfirm service is developed by dividing the Eastern Intertie segment  
3    cost by the forecast amount of Colstrip energy. *See* Table 9. The proposed IE-02 rate  
4    cap is 1.38 mills/kWh. This rate is set pursuant to the Montana Intertie Agreement.

5

6    **2.4.5 Delivery Charge Calculations**

7

8    **2.4.5.1 Utility Delivery Charge**

9    The Utility Delivery Charge is charged to customers taking delivery of power, either  
10   Federal or non-Federal, over transformers that are in the Utility Delivery Segment.

11   The calculation of the rate is shown in Table 10. The Utility Delivery charge of  
12   \$1.299/kW-mo. equals the adjusted Utility Delivery segment cost of \$10.059 million  
13   divided by the load on Utility Delivery facilities (645 MW) determined in Appendix C.  
14   Consistent with the 2002 Power Rate Case Initial Proposal, the calculation of the  
15   Utility Delivery Charge assumes that no funds were received from the PBL.

16

17   **2.4.5.2 DSI Delivery Charge**

18   The DSI Delivery Charge is designed to recover the entire cost of the DSI Delivery  
19   segment from the DSI customers taking service over delivery facilities. The forecast of  
20   revenues from application of UFT charges to DSI Delivery facilities (Appendix G)  
21   results in a revenue shortfall when compared to the DSI Delivery segment cost.  
22   Therefore, to recover the entire cost of the DSI Delivery segment, the DSI Delivery  
23   charge includes an adjustment factor that is applied to each DSI's UFT charge. The

1 adjustment factor of 1.197 is the total DSI Delivery segment costs divided by the  
2 expected UFT revenues. Calculation of the adjustment factor is shown in Table 10.  
3 The expected UFT revenues are based on projected increases in O&M costs and  
4 investment amounts as shown in Appendix G.

5

6 **2.4.6 Ancillary Service and Control Area Service Rate Calculations**

7 Rates are calculated for all Ancillary Services and Control Area Services with the  
8 exception of the Energy Imbalance/Generation Imbalance Services. Under these  
9 Imbalance services, energy return is required if customers stay within an imbalance  
10 band; otherwise, customers pay a penalty rate. Control Area Service rates for Regulation  
11 and Frequency Response Service, and Spinning and Supplemental Operating Reserve  
12 Services are the same as the Ancillary Service rates. CAS rates allow a party to satisfy  
13 all of its reliability obligations for resources or loads in the BPA Control Area.

14

15 **2.4.6.1 Cost**

16 The Ancillary Service rates are based on the adjusted revenue requirement for  
17 Ancillary Services in Table 3. These net revenue credit to the Ancillary Services  
18 revenue requirement is segmented among the six Ancillary Services. Table 11,  
19 columns B and C. For customers taking FPT service, the two required services of  
20 Scheduling, System Control and Dispatch (Scheduling) and Reactive Supply and  
21 Voltage Control from Generation Sources (Generation Reactive) have not been  
22 unbundled. Therefore, the revenue requirements for these two services are further

1      adjusted to account for the portion of the revenue requirement being recovered  
2      through the FPT rates. Table 11, columns D and E.

3

4      **2.4.6.2 Scheduling, System Control and Dispatch and Reactive Supply and Voltage**  
5      **Control from Generation Sources Rate Calculations**

6      Scheduling Service and Generation Reactive Service is charged to all users of the  
7      Network and Interties on the same basis as their transmission service. The billing  
8      determinant is all forecasted long-term and short-term use of the Network and  
9      Interties, excluding FPT use. These are the same loads that are used to calculate the  
10     IR, PTP, NCD, NT Base, and IS rates. For the Generation Reactive rate, the total  
11     billing determinant is also adjusted for forecasted self-supply of Generation Reactive.  
12     Self-supply of Generation Reactive is limited to resources that meet specified criteria,  
13     and is estimated at 1,125 MW. Table 11, line 11. The rate design for these two  
14     Ancillary Service rates for PTP transmission service is the same as that used for the  
15     PTP transmission service rates—PTP, IS, and IM--so that these rates can be applied to  
16     all long-term and short-term uses of the transmission system. *See* section 2.4.2 for a  
17     description of the PTP rate design.

18

19      **2.4.6.3 Regulation and Frequency Response Rate Calculation**

20      All Transmission Customers serving load in the BPA Control Area must purchase  
21      Regulation and Frequency Response Service. The Billing Factor for this service is  
22      energy delivered to load in the BPA Control Area. The forecasted BPA Control  
23      Area load for the 2002-2003 rate period is the average 1998 and 1999 BPA Control  
24      Area load, escalated at 2% a year. The 2% escalation is based on the increase

1 between 1998 and 1999 Control Area loads. *See* Table 11, lines 18-19. Dividing  
2 the average Regulation and Frequency Response rate development cost of  
3 \$15.868 million by the average Control Area load of 6,109 MW results rate in a rate  
4 of 0.3 mills/kilowatthour.

5

6 **2.4.6.4 Operating Reserves Rate Calculation**

7 All Transmission Customers serving firm load obligations from generation in the  
8 BPA Control Area must purchase operating reserves. The amount of required  
9 operating reserves is based on the reserve obligation associated with resources in the  
10 BPA Control Area. The BPA Control Area reserve obligation of 525 average MW is  
11 calculated based on the capacity of Federal System resources: 464 MW is 5% of  
12 hydroelectric generation (9280 MW), and 61 MW is 7% of non-hydroelectric  
13 generation (870 MW). The total reserve obligation is split evenly between Spinning  
14 and Supplemental reserve obligation. This obligation is determined by applying the  
15 standards established by the Western Systems Coordinating Council (WSCC)  
16 "Minimum Operating Reliability Criteria" (MORC), and the Northwest Power Pool  
17 (NWPP) Reserve Sharing program for control areas. *See* Table 11, lines 11.13-  
18 11.17. The Spinning and Supplemental Reserves rates of 8.27 mills/kilowatthour are  
19 calculated by dividing the Operating Reserve revenue requirements by the BPA  
20 Control Area reserve obligations.

1      **3. TRANSMISSION AND ANCILLARY SERVICE RATE SCHEDULES**

2

3      **3.1      Formula Power Transmission Rates (FPT-02.1 and FPT-02.3)**

4      The FPT-02.1 and FPT-02.3 rates are available for firm transmission of non-Federal  
5      power on the Network for both full-year and partial-year service. Nonfirm wheeling  
6      may not be done at the FPT rate. The embedded cost FPT rates include a distance  
7      component for transmission lines and various transformation and terminal charges. The  
8      FPT-02.1 rate is used for contracts allowing annual rate adjustments. The FPT-02.3  
9      rate is used for contracts that allow a rate change only once every 3 years. Both FPT  
10     rates are adjusted in this rate proposal and have the same charges. FPT service does not  
11     allow assignment of Transmission Demand to third parties. The FPT rates apply only  
12     to existing contracts.

13

14     The FPT rate schedules also include the Power Factor Penalty Charge, the Failure to  
15     Comply Penalty Charge, and notice regarding ancillary services. See section 3.11 for  
16     further discussion of these provisions.

17

18      **3.2      Integration of Resources Rate (IR-02)**

19      The proposed IR-02 rate is a "postage stamp" rate (independent of distance) consisting  
20     of a monthly demand charge. The IR rate applies to existing agreements for the  
21     transmission of non-Federal power. Such agreements are used to integrate multiple  
22     resources and transmit power to multiple points of delivery at the customer's system.  
23     Nonfirm wheeling from alternate Points of Integration, up to the contractually specified

1 total Transmission Demands, may be done at the IR rate, subject to the availability of  
2 transmission capacity. Contractually specified IR Transmission Demands for Points of  
3 Integration are based on the annual peak output of a generating resource or annual peak  
4 demand in a purchase power agreement. The billing factor for the embedded cost IR  
5 demand charge is Total Transmission Demand. Upon agreement, the IR rate may be  
6 applied to other services, such as access to an intertie. IR service does not allow  
7 assignment of Transmission Demand to third parties.

8

9 BPA proposes to continue the Short Distance Discount (SDD) which decreases the IR  
10 rate by up to 40 percent when the distance between Point of Integration and Point of  
11 Delivery is less than 75 circuit miles. This is an exception to the postage-stamp demand  
12 charge for transactions that customers can demonstrate use only specific FCRTS  
13 facilities for a distance of less than 75 circuit miles. This demonstration is made as part  
14 of the process of negotiating an agreement that uses this rate schedule. The SDD rate is  
15 determined by multiplying the IR Base rate by the following formula:

$$.6 + (.4 \times \text{transmission distance})$$

75 miles

17  
18 The IR rate schedule also includes the Power Factor Penalty Charge, the requirement to  
19 purchase Scheduling and Generation Reactive ancillary service, the Delivery Charge,  
20 and the Failure to Comply Penalty Charge. *See* section 3.11 for further discussion of  
21 these provisions.

1      **3.3      Network Integration Rate (NT-02)**

2      The proposed NT-02 rate applies to Transmission Customers taking Network Integration  
3      Service under the Open Access Transmission Tariff. NT Service provides transmission  
4      service for a customer's retail load. Charges for use of the Network include a Base  
5      Charge and a Transmission Load Shaping Charge. The NT Base Charge is billed on a  
6      net load basis: it is applied each month to the customer's total load that occurs on the  
7      hour of the Monthly Transmission Peak Load (MTPL) less Declared Customer-Served  
8      Load (Declared CSL). Declared CSL is the monthly amount of capacity load the  
9      customer declares it will serve on a firm basis without using NT transmission service.

10     The Actual CSL, the amount of the customer's load that is actually served without using  
11    NT service, must be greater than 60 percent of the Declared CSL on average over all the  
12    Heavy Load Hours (HLH). If the customer fails to maintain its Actual CSL at this level,  
13    it will be billed for its total retail load on the hour of the MTPL. In addition, if the  
14    Actual CSL is less than the Declared CSL on the hour of the MTPL, the NT  
15    Unauthorized Increase Charge is applied to the difference between the Actual and  
16    Declared CSL.

17

18     The Transmission Load Shaping Charge is applied to the customer's Network Load on  
19    the hour of the MTPL. This Charge recovers the cost of having transmission available to  
20    serve the customer's annual peak load.

21

22     The NT-02 rate schedule also includes a variety of adjustments, charges and other rate  
23    provisions, including: a requirement to purchase Scheduling and Generation Reactive

1 ancillary services; the Delivery Charge; the NT Unauthorized Increase Charge discussed  
2 above; the Power Factor Penalty Charge; the Redispatch Adjustment for Accepted Bids  
3 and the Redispatch Charge when TBL implements redispatch procedures; the Failure to  
4 Comply Penalty Charge; notice of TBL's intent to charge incremental cost rates under  
5 specified conditions; and the Rate Adjustment Due to FERC Order Under FPA §212.

6 *See* section 3.11 for further discussion of these provisions. Finally, the rate schedule  
7 provides notice regarding Direct Assignment Facility costs which are to be collected  
8 under the Advance Funding rate or Use-of-Facilities rate and a Metering Adjustment for  
9 Points of Delivery that do not have hourly demand meters.

10

11 **3.4 Network Contract Demand Rate (NCD-02)**

12 The proposed NCD-02 rate applies to Transmission Customers taking Network  
13 Contract Demand Service under the Open Access Transmission Tariff. The NCD-02  
14 rate applies to Network transmission service on a long-term contract path basis. NCD  
15 service may be used to serve native load and transactions with third parties over  
16 Network (with access to the Interties) and Delivery facilities. The NCD rate schedule  
17 provides a monthly rate for long-term service. The NCD demand charge is applied to  
18 the sum of Transmission Demands at PODs. NCD customers must specify Network  
19 Resources in their service agreement, but are not charged on them. NCD service  
20 allows flexibility to use Network Resources not specified in their service agreements  
21 on a nonfirm basis at no additional cost. In addition, NCD service allows firm service  
22 at secondary PODs, on an as-available basis.

23

1 The NCD-02 rate schedule also includes a variety of adjustments, charges and other rate  
2 provisions, including a requirement to purchase Scheduling and Generation Reactive  
3 ancillary services; the Delivery Charge; the Power Factor Penalty Charge; the NCD  
4 Unauthorized Increase Charge; the Redispatch Adjustment for Accepted Bids and the  
5 Redispatch Charge when TBL implements redispatch procedures; the Failure to Comply  
6 Penalty Charge; the Reservation Fee; notice of TBL's intent to charge incremental cost  
7 rates under specified conditions; and the Rate Adjustment Due to FERC Order Under  
8 FPA §212. *See* section 3.11 for further discussion of these provisions. Finally, the rate  
9 schedule provides notice regarding Direct Assignment Facility costs which are to be  
10 collected under the Advance Funding rate or Use-of-Facilities rate.

11

12 **3.5 Point-to-Point Rate (PTP-02)**

13 The proposed PTP-02 rate includes rates for Long-Term Firm service, and daily and  
14 hourly firm and nonfirm service on the Network. Under the 1996 rates, PTP service on  
15 the Network is available under three rate schedules: the PTP rate for firm service; the  
16 Reserved Nonfirm (RNF) rate for short-term nonfirm service; and the Energy  
17 Transmission (ET) rate for hourly nonfirm service. These three 1996 rate schedules are  
18 combined into one rate schedule for 2002. The PTP-02 rate schedule includes all rates  
19 for all PTP services on the Network.

20

21 The proposed PTP-02 rate applies to Network transmission service on a contract path  
22 basis. PTP service may be used to serve native load and transactions with third parties  
23 over Network (with access to the Southern Intertie) and Delivery facilities. The PTP rate

1 schedule includes a monthly rate for long-term service, and downwardly flexible daily  
2 and hourly rates that apply to both firm and nonfirm service. Reservations for short-term  
3 service are made for consecutive days for daily service, or consecutive hours for hourly  
4 service.

5

6 Two rates for daily service are provided--one for the first five days of a reservation, and  
7 the other for the remaining days of the reservation. For reservations with a duration  
8 greater than five days, one charge will be applied to the first five days of the reservation,  
9 and a second charge to the remaining days of the reservation. One hourly rate applies to  
10 all hours of a reservation for hourly service.

11

12 The PTP-02 rate schedule continues to include a Short-Distance Discount which is very  
13 similar to the SDD in the IR rate. The PTP rate schedule also includes: a requirement to  
14 purchase Scheduling and Generation Reactive ancillary services; the Delivery Charge;  
15 the Power Factor Penalty Charge; an Unauthorized Transmission Increase charge; the  
16 Reservation Fee; the Failure to Comply Penalty Charge; a credit for interruption of daily  
17 nonfirm service, notice of BPA's intent to charge incremental cost rates under specified  
18 conditions; and the Rate Adjustment Due to FERC Order Under FPA §212. *See*  
19 section 3.11 for further discussion of these provisions. Finally, the rate schedule  
20 provides notice regarding Direct Assignment Facility costs which are to be collected  
21 under the Advance Funding rate or Use-of-Facilities rate.

1      **3.6 Point-to-Point Intertie Service: Southern Intertie Rate (IS-02) and Montana**  
2      **Intertie Rate (IM-02)**  
3

4      The IS-02 and IM-02 rate schedules are applicable to all transmission service on the  
5      Southern Intertie and Montana Intertie, respectively, under the terms and conditions of  
6      the PTP tariff. In addition, the IS rate schedule applies to transmission contracts for  
7      Southern Intertie service in effect prior to October 1, 1996. The IM rate provides for  
8      service over BPA's 185 MW of Montana Intertie capacity rights. The IS and IM rate  
9      schedules include rates for long-term firm service, and daily and hourly firm and  
10     nonfirm service. The daily and hourly firm and nonfirm rates are caps that are  
11     downwardly flexible.

12

13     Similar to the PTP-02 rate schedule, the IS-02 and IM-02 rate schedules provide blocked  
14     rates for daily firm and nonfirm service. The IS rate schedule also includes rates for  
15     north-to-south service and rates for south-to-north service. The north-to-south IS rates  
16     are seasonally differentiated with rates for the April through September summer period  
17     and rates for the October through March winter period.

18

19     The IS and IM rate schedules also include: the requirement to purchase certain ancillary  
20     services; a credit for interruption of daily nonfirm service; the Reservation Fee; the  
21     Power Factor Penalty Charge; an Unauthorized Transmission Increase charge; the  
22     Failure to Comply Penalty Charge; notice of BPA's intent to charge incremental cost  
23     rates under specified conditions, and the Rate Adjustment Due to FERC Order Under  
24     FPA §212. See section 3.1X for further discussion of these provisions. Finally, the rate

1 schedules provide notice regarding Direct Assignment Facility costs which are to be  
2 collected under the Advance Funding rate or Use-of-Facilities rate.

3

4 **3.7 Townsend-Garrison Transmission Rate (TGT-02) and Eastern Intertie Rate**  
5 **(IE-02)**

6

7 The proposed TGT and IE rates are based on provisions of the Montana Intertie  
8 Agreement (Contract No. DE-MS79-81BP90210, as amended). The TGT-02 rate  
9 recovers the cost of the Townsend-Garrison facilities. The IE-02 rate is available to  
10 parties to the Montana Intertie Agreement for nonfirm transmission service on the  
11 Eastern Intertie on the portion of the Eastern Intertie capacity above BPA's firm  
12 transmission rights. The stated rate, an energy charge, sets the cap and is downwardly  
13 flexible. Revenue from these transactions is treated as a revenue credit against the TGT  
14 rate.

15

16 **3.8 Use-of-Facilities Transmission Rate (UFT-02)**

17 Wheeling transactions over specifically identified facilities occur under the UFT-02  
18 formula-based rate. The UFT rate schedule provides for UFT charges on a sole-use  
19 basis, a common practice for establishing UFT charges when only one customer uses  
20 specified facilities. In addition, the Power Factor Penalty Charge and notice regarding  
21 ancillary services is included in the rate schedule.

22

23 **3.9 Advance Funding Rate (AF-02)**

24 This rate schedule allows TBL to collect the capital and related costs of specified  
25 TBL-owned transmission facilities through advance funding when such advance

1 payment is provided for in an agreement with a customer. Such facilities may include  
2 interconnection and resource integration facilities, and FCRTS upgrades, reinforcements,  
3 and replacements. Following commercial operation of the specified facilities, a true-up  
4 of estimated costs with actual costs would occur. Application of this rate shall be  
5 pursuant to FERC transmission pricing policy.

6

7 **3.10 Ancillary Services and Control Area Service Rate Schedule (ACS-02)**

8 The proposed ACS-02 rate schedule includes rates for the six required Ancillary  
9 Services and four Control Area services. All transmission contract holders must satisfy  
10 the reliability requirements associated with their energy transactions, whether energy is  
11 delivered into, out of, within, or through the BPA Control Area. Ancillary Services are  
12 needed with transmission service to maintain reliability within and among the Control  
13 Areas affected by the transmission service. TBL, as the Transmission Provider, is  
14 required to provide, and Transmission Customers are required to purchase, the Ancillary  
15 Services of Scheduling, System Control and Dispatch, and Reactive Supply and Voltage  
16 Control from Generation Sources. TBL is required to offer to provide the following  
17 Ancillary Services to Transmission Customers serving load or integrating generation  
18 within the BPA Control Area: Regulation and Frequency Response; Energy Imbalance;  
19 Operating Reserve – Spinning; and Operating Reserve - Supplemental. The  
20 Transmission Customer serving load or integrating generation within the BPA Control  
21 Area is required to acquire these Ancillary Services, whether from the TBL, from a third  
22 party, or by self-supply.

1 Control Area Service rates apply to transactions in the BPA Control Area for which  
2 the reliability obligations have not been met through Ancillary Services or some other  
3 arrangement. The four CAS rates are Load Regulation and Frequency Response  
4 Service; Generation Imbalance Service; Operating Reserve -- Spinning Reserve  
5 Service; and Operating Reserve – Supplemental Reserve Service. To the extent that  
6 resources or loads in the BPA Control Area do not otherwise satisfy the reliability  
7 obligations that their energy transactions impose on the BPA Control Area, Control  
8 Area Services must be purchased from TBL.

9

10 All rates in the ACS-02 rate schedule are subject to the Rate Adjustment Due to  
11 FERC Order under FPA Section 212.

12

13 **3.10.1 Scheduling, System Control, and Dispatch (Scheduling) Service**

14 Scheduling Service is necessary to the provision of basic transmission service within  
15 every control area. This service can be provided only by the operator of the control area  
16 in which the transmission facilities used are located. This is because the service is to  
17 schedule the movement of power through, out of, within, or into the control area.  
18 Scheduling Service also includes the dispatch of generating resources to maintain  
19 generation/load balance and maintain security during the transaction.

20

21 The rates in section II.A of the ACS-02 rate schedule apply to all transmission  
22 transactions under the Open Access Transmission Tariff and IR service agreements.  
23 Transactions on the Network and Interties are each charged separately for this service on

1 the same basis as they are charged for their transmission service: transmission demands  
2 for PTP (Network, Southern Intertie, Montana Intertie), NCD, and IR customers; and the  
3 Base Charge billing factor for NT customers. The rate charges are structured to  
4 correspond to the various transmission services available – long-term and short-term  
5 firm and nonfirm service. Thus, the Scheduling charge for long-term firm service would  
6 apply to NT, NCD, IR, and long-term PTP service. The short-term firm and nonfirm  
7 Scheduling charges would apply to short-term firm and nonfirm PTP transmission  
8 service. All charges are downwardly flexible; any discounts would be offered consistent  
9 with section II.H of the GRSPs.

10

11 **3.10.2 Reactive Supply and Voltage Control from Generation Sources (Generation**  
12 **Reactive) Service**

13  
14 Generation Reactive Service is the provision of reactive power and voltage control by  
15 generating facilities under the control of the TBL. This service is necessary to the  
16 provision of basic transmission service within every control area.

17  
18 The rates in section II.B of the ACS-02 rate schedule apply to all transmission  
19 transactions under the Open Access Transmission Tariff and IR service agreements. The  
20 description of the Scheduling Service rate schedule, above, also applies to the  
21 Generation Reactive rate schedule. However, the Generation Reactive Service rate  
22 includes a billing factor provision that recognizes that under some circumstances this  
23 Service may, in part, be self-provided.

1    **3.10.3 Regulation and Frequency Response (Regulation) Service**

2    Regulation Service is necessary to provide for the continuous balancing of resources  
3    (generation and interchange) with load and for maintaining scheduled Interconnection  
4    frequency at sixty cycles per second (60 Hz). Regulation Service is accomplished by  
5    committing on-line generation whose output is raised or lowered (predominantly through  
6    the use of automatic generating control equipment) as necessary to follow the moment-  
7    by-moment changes in load. The obligation to maintain this balance between resources  
8    and load lies with the TBL. The TBL must offer this service when the transmission  
9    service is used to serve load within the BPA Control Area. The transmission customer  
10   must either purchase this service from the TBL or make alternative comparable  
11   arrangements to satisfy its Regulation Service obligation. Customers may be able to  
12   satisfy the Regulation Service obligation by providing generation with automatic  
13   generation control capabilities to the TBL.

14  
15   The Regulation Service rate in section II.C of the ACS-02 rate schedule provides an  
16   energy charge to be applied to the customer's load in the BPA Control Area. The charge  
17   is downwardly flexible; any discounts would be offered consistent with section II.H of  
18   the GRSPs.

19  
20   **3.10.4 Energy Imbalance Service**

21   Energy Imbalance Service is for transmission within and into the BPA Control Area to  
22   serve load in the Control Area. Energy Imbalance represents the deviation between the

1 scheduled and actual delivery of energy to a load in the BPA Control Area over a single  
2 hour.

3

4 All Transmission Customers serving load in the BPA Control Area are subject to  
5 charges for Energy Imbalance. The Energy Imbalance rate in section II.D of the  
6 ACS-02 rate schedule establishes an imbalance deviation band. If deviations between  
7 customers' loads and schedules stay within the imbalance deviation band, customers  
8 are only required to return the energy at a later time. A deviation account is used to  
9 sum the positive and negative deviations from schedule over all schedule hours.

10 Once a month this account must be settled (brought to zero). TBL will designate the  
11 time and amounts to be delivered to accomplish the settlement. The customer will  
12 arrange for and schedule the delivery.

13

14 If actual loads are greater than schedules by more than the greater of 2 MW or 1.5%, a  
15 penalty rate applies. For these deviations in excess of the energy imbalance band, the  
16 rate is the higher of 100 mills per kWh or 110% of BPA's incremental cost. BPA's  
17 incremental cost will be a market-based rate determined by an hourly energy index in the  
18 PNW. If actual loads are less than schedules, by more than 2 MW or 1.5%, the customer  
19 will receive a credit for the excess energy equal to 90% of the market rate, provided that  
20 the deviation was not an Intentional Deviation and the Federal System was not in Spill  
21 Condition during the month.

1    **3.10.5 Operating Reserve -- Spinning Reserve Service**

2    Spinning Reserve Service is needed to serve load immediately in the event of a system  
3    contingency. Spinning Reserve Service may be provided by generating units that are on-  
4    line and loaded at less than maximum output. TBL must offer this service when the  
5    transmission service is used to serve firm load from generation located in the BPA  
6    Control Area. The Transmission Customer must either purchase this service from TBL  
7    or make alternative comparable arrangements to satisfy its Spinning Reserve Service  
8    obligation. The Transmission Customer's obligation is determined consistent with North  
9    American Electric Reliability Council (NERC), WSCC, and Northwest Power Pool  
10   criteria.

11    
12   The Spinning Reserve Service rate, section II.E of the ACS-02 rate schedule, includes  
13   two components. The first component is an energy charge that is applied to the  
14   customer's Spinning Reserve Requirement. This rate of 8.27 mills/kWh recovers the  
15   cost of having generation available to respond to a system contingency. The Spinning  
16   Reserve Requirement is determined, based on current WSCC and NWPP standards, as  
17   2.5% of the hydroelectric generation and 3.5% of the non-hydroelectric generation  
18   located in the BPA Control Area used to serve the transmission customer's firm load.  
19   The Spinning Reserve Requirement will be adjusted when and if WSCC and NWPP  
20   standards change. The Spinning Reserve charge is downwardly flexible; any discounts  
21   would be offered consistent with section II.H of the GRSPs.

1      The second Spinning Reserve Service rate component charges the customer for energy  
2      actually delivered when a system contingency occurs. The customer has the option of  
3      returning the energy at times specified by the TBL, or purchasing the energy at the  
4      hourly market index price that was effective when the contingency occurred.

5

6      **3.10.6 Operating Reserve -- Supplemental Reserve Service**

7      Supplemental Reserve Service is needed to serve load in the event of a system  
8      contingency; however, it is not available immediately to serve load but rather within a  
9      short period of time. Supplemental Reserve Service may be provided by generating  
10     units that are on-line but unloaded, by quick-start generation, or by interruptible load.

11     The TBL must offer this service when the transmission service is used to serve firm load  
12     from generation located in the BPA Control Area. The Transmission Customer must  
13     either purchase this service from the TBL or make alternative comparable arrangements  
14     to satisfy its Supplemental Reserve Service obligation. The Transmission customer's  
15     obligation is determined consistent with NERC, WSCC and Northwest Power Pool  
16     criteria.

17

18     The Supplemental Reserve Service rate, section II.F of the ACS-02 rate schedule, is the  
19     same as the Spinning Reserve Service rate described above with one exception. The  
20     Billing Factor for the Supplemental Reserve Requirement includes an additional factor  
21     accounting for power scheduled into the BPA Control Area that is interruptible on  
22     10 minute's notice, consistent with current WSCC and NWPP standards.

23

1      **3.10.7 CAS Regulation and Frequency Response Service**

2      The Control Area Service Regulation and Frequency Response is the same technical  
3      service, at the same rate, as the Ancillary Service so named. The difference is, the  
4      Control Area Service is offered to loads in the BPA Control Area that may not be taking  
5      BPA basic transmission service. Loads served by generation "behind the meter" are an  
6      example. Unless that load is receiving Regulation and Frequency Response Service to  
7      the same quality standards BPA uses for its service from the "behind the meter"  
8      generation, the BPA Control Area is in fact providing the service to that load.

9      Reliability standards established by WSCC applied to the BPA Control Area result in  
10     BPA operating sufficient regulating reserves to cover the requirements of all Control  
11     Area load. Each load in the Control Area must purchase an amount to cover the  
12     obligation it imposes upon the Control Area. To the extent that loads are not otherwise  
13     receiving this service, it must be purchased from the BPA Control Area. The ACS-02  
14     rate schedule identifies the energy charge to be applied to load in the BPA Control Area.

15

16      **3.10.8 CAS Generation Imbalance Service**

17      Generation Imbalance Service provides or absorbs energy to meet the difference  
18      between scheduled and actual generation delivered to the BPA Control Area from  
19      generators located in the BPA Control Area. All generators in the BPA Control Area are  
20      subject to charges for Generation Imbalance Service. The Generation Imbalance Service  
21      rate in section III.B of the ACS-02 rate schedule establishes an imbalance deviation  
22      band. If the difference between a generator's schedule and its delivery stays within the  
23      imbalance deviation band, the only requirement is return of energy at a later time. A

1 deviation account is used to sum the positive and negative deviations from schedule over  
2 all schedule hours. Once a month this account must be settled (brought to zero). TBL  
3 will designate the time and amounts to accomplish the settlement. The generator will  
4 arrange for and schedule the delivery.

5

6 If actual generation is less than schedule by more than 2 MW or 1.5%, a penalty rate  
7 applies. For these deviations in excess of the generation imbalance deviation band, the  
8 rate is the higher of 100 mills/kWh or 110% of BPA's incremental cost. BPA's  
9 incremental cost will be a market- based rate determined by an hourly energy index in  
10 the PNW. If actual generation exceeds the schedule by more than 2 MW or 1.5%, the  
11 customer will receive a credit for the excess energy equal to 90% of the market rate,  
12 provided that the deviation was not an Intentional Deviation and the Federal System was  
13 not in Spill Condition during the month.

14

15 **3.10.9 CAS Operating Reserve -- Spinning Reserve Service**

16 The Control Area Service Operating Reserve -- Spinning Reserve Service is the same  
17 technical service, at the same rate, as the Ancillary Service so named. The difference is  
18 that the Control Area Service is taken by generators in the BPA Control Area which may  
19 not have a Transmission Contract with BPA, but have energy transactions which impose  
20 a spinning reserve obligation on the BPA Control Area. The generator's obligation is  
21 determined consistent with NERC, WSCC, and Northwest Power Pool criteria. To the  
22 extent that Spinning Reserve Service is not otherwise provided to cover the generator's

1 Spinning Reserve obligation (through Ancillary Service purchases or self-supply, for  
2 example), the Control Area Service is provided and must be purchased.

3

4 The Spinning Reserve Service rate, section III.C of the ACS-02 rate schedule, includes  
5 two components. The first component is an energy charge that is applied to the  
6 customer's Spinning Reserve Requirement. This rate of 8.27 mills/kWh recovers the  
7 cost of having generation available to respond to a system contingency. The Spinning  
8 Reserve Requirement is determined, based on current WSCC and NWPP standards, as  
9 2.5% of the hydroelectric generation and 3.5% of the non-hydroelectric generation  
10 located in the BPA Control Area used to serve the firm load responsibility. The  
11 Spinning Reserve Requirement will be adjusted when and if WSCC and NWPP  
12 standards change.

13

14 The second Spinning Reserve Service rate component charges the customer for energy  
15 actually delivered when a system contingency occurs. The customer has the option of  
16 returning the energy at times specified by the TBL, or purchasing the energy at the  
17 hourly market index price that was effective when the contingency occurred.

18

19 **3.10.10 CAS Operating Reserve -- Supplemental Reserve Service**

20 The Control Area Service Operating Reserve -- Supplemental Reserve Service is the  
21 same technical service, at the same rate, as the Ancillary Service so named. The  
22 difference is that the Control Area Service is taken by generators in the BPA Control  
23 Area which may not have a Transmission Contract with BPA, but have energy

1 transactions which impose a supplemental reserve obligation on the BPA Control Area.  
2 The generator's obligation is determined consistent with NERC, WSCC, and Northwest  
3 Power Pool criteria. To the extent that Supplemental Reserve Service is not otherwise  
4 provided to cover the generator's Supplemental Reserve obligation (through Ancillary  
5 Service purchases or self-supply, for example), the Control Area Service is provided and  
6 must be purchased.

7

8 The Supplemental Reserve Service rate, section III.D of the ACS-02 rate schedule, is the  
9 same as the Spinning Reserve Service rate described above with one exception. The  
10 Billing Factor for the Supplemental Reserve Requirement (section II.F.2.a) includes an  
11 additional factor accounting for any power scheduled into the BPA Control Area that is  
12 interruptible on 10 minute's notice, consistent with current WSCC and NWPP standards.

13

14 **3.11 Other Charges and Provisions**

15

16 **3.11.1 Delivery Charge**

17 The Delivery Charge, section II.A of the GRSPs, is applied to deliveries of power over  
18 Delivery facilities as defined by the DSI Delivery and Utility Delivery segments. The  
19 Delivery Charge includes separate rates for service over DSI Delivery and Utility  
20 Delivery facilities.

21

22 The DSI Delivery charge uses the UFT-02 rate increased by a factor of 1.197 to  
23 determine the rate. If the DSI Delivery facilities serve only a DSI load and no other

1 TBL customers, the UFT charge will be a sole use charge; i.e., the total annual cost  
2 associated with the facilities determined in accordance with section III.B.1 of the UFT-  
3 02 rate schedule. If the DSI Delivery facilities serve more than one customer, the UFT  
4 charge will be based on the total annual cost associated with the facilities prorated  
5 between or among the customers using the delivery facilities in accordance with  
6 section III.B.2 of the UFT-02 rate schedule. The annual cost (total or prorated) will be  
7 divided by 12 and multiplied by a factor of 1.197 to calculate the monthly DSI Delivery  
8 Charge.

9

10 The Utility Delivery Charge continues to be an average cost charge that is assessed on  
11 the demand on the Utility Delivery facilities on the hour of the Monthly Transmission  
12 Peak Load.

13

14 **3.11.2 Power Factor Penalty Charge**

15 TBL proposes to continue charging customers for their excessive reactive power  
16 requirements. The Power Factor Penalty Charge, found in section II.C. of the GRSPs  
17 and included in TBL's transmission rate schedules, will replace the current Reactive  
18 Power Charge in the 1996 rate schedules. The customer will be billed directly for  
19 measured quantities of reactive demand which fall outside a specified deadband. The  
20 deadband equals 25% of the highest real power demand (based on a 0.97 power factor)  
21 at the Point of Interconnection (POI) during the billing month. The Power Factor  
22 Penalty Charge applies only to lagging reactive demand during Heavy Load Hours and  
23 only to leading reactive demand during Light Load Hours. An eleven-month ratchet will

1      be applied to the demand charge. There will be separate ratchets for leading and lagging  
2      reactive demand.

3

4      The Power Factor Penalty Charge is applied hourly to each POI between TBL and  
5      parties interconnected to the FCRTS. A customer taking power under multiple rate  
6      schedules will pay for its reactive power requirements at each point as if it were taking  
7      service under only one rate schedule.

8

9      The purpose of the Power Factor Penalty Charge is to provide an incentive to minimize  
10     preventable reactive flows at interconnections with the FCRTS. The demand charge for  
11     lagging reactive power is based on the installed cost of capacitors; the demand charge  
12     for leading reactive power is based on the installed cost of reactors. The proposed rate is  
13     the per unit installed cost of reactors and capacitors, and is calculated by dividing the  
14     annual cost of the respective facilities by the installed capacity to get cost per kVAr.  
15     This is then multiplied by the penalty factor of two. Calculation of the Power Factor  
16     Penalty Charge is shown in Appendix K.

17

18     **3.11.3 Redispatch Adjustment for Accepted Bids**

19     This provision, found in section II.E of the GRSPs, recognizes the obligation of parties  
20     whose decremental redispatch bids have been accepted, to pay TBL the total cost  
21     associated with the accepted bid. It also recognizes TBL's obligation to promptly pay  
22     parties for their accepted incremental bids. The Redispatch Adjustment is included in  
23     the NT and NCD rate schedules because NT and NCD customers are required to submit

1 decremental bids for redispatch procedures. However, it is applicable to any party that  
2 submits incremental or decremental bids for redispatch. On accepted bids, the credit or  
3 charge will appear on the party's monthly transmission bill. However, if a party is not  
4 otherwise a TBL customer, TBL will pay the party for the accepted incremental bid  
5 within 30 days following the end of the month that the redispatch occurred.

6

7 **3.11.4 Redispatch Charge**

8 The Tariff (sections 37.3 and 44.3) requires each NT and NCD customer to bear a  
9 proportionate share of total redispatch cost based on the Redispatch Mechanism. The  
10 Redispatch Charge is a formula rate that charges each NT and NCD customer the net  
11 cost of implementing redispatch procedures. The net cost of redispatch is determined for  
12 each hour that redispatch procedures are implemented and allocated to customers based  
13 on their use of the congested path for that hour.

14

15 **3.11.5 Failure to Comply Penalty Charge**

16 The Failure to Comply Penalty, found in section II.B of the GRSPs, will be assessed to  
17 parties that fail to properly respond to a curtailment, redispatch, or load shedding order  
18 from TBL. This includes, without limitation, failure of chosen incremental and  
19 decremental bidders to adjust their generation as part of TBL's redispatch mechanism;  
20 failure of generators in the BPA Control Area or which directly connect to the FCRTS to  
21 change generation when directed to do so by TBL; failure to shed load in accordance  
22 with the Tariff or any applicable agreements between TBL and the party; failure to

1 curtail a schedule; and failure to respond to TBL operational orders in the time period  
2 specified by regional reliability criteria.

3

4 **3.11.6 Unauthorized Increase Charge**

5 For rate schedules under the PTP tariff (PTP, IS, and IM), the NT tariff (NT), and the  
6 NCD tariff (NCD), TBL proposes to assess an Unauthorized Increase Charge (UIC) if  
7 customers exceed their transmission demands. The UIC is set at half the annual PTP  
8 rate, or \$6.79 per kW per month. The UIC would not be applied if the transmission  
9 customer arranges for short-term transmission prior to exceeding contracted amounts.

10

11 For NCD service, TBL will calculate unauthorized increases at PODs and at Network  
12 Resources; the higher of which will be the billing factor for the UIC. The POD  
13 unauthorized increase is calculated the same way as the UIC for PTP services. The  
14 unauthorized increase at Network Resources will be based on a comparison of actual  
15 demands at Network Resources to the customer's total Transmission Demands at PODs.  
16 Measurement of actual demands for one-way dynamically scheduled Network Resources  
17 will be based on a 10-minute moving average measure, and for all other Network  
18 Resources will be based on the 60-minute integrated demands or transmission schedules.

19

20 The UIC in the NT rate schedule is applied if the customer's Actual Customer-Served  
21 Load is less than its Declared CSL on the monthly billing hour.

1    **3.11.7 Reservation Fee**

2    The Reservation Fee, found in section II.G in the GRSPs, is included in the NCD, PTP,  
3    IS, and IM rate schedules. The Reservation Fee is applicable to NCD and PTP  
4    Transmission Customers who want to postpone the commencement of service pursuant  
5    to sections 29.5 or 38.7 of the Open Access Transmission Tariff for up to five years.  
6    The Reservation Fee is a nonrefundable fee equal to one month's charge for each year or  
7    fraction of a year for which the customer chooses to postpone service. If TBL receives a  
8    request for service over the same transmission path and there is insufficient capacity to  
9    accommodate both, the original transmission customer may begin paying the full  
10   monthly transmission rate or release the reserved capacity.

11    
12   **3.11.8 Incremental Cost Rates**

13   TBL provides notice in most of the firm rate schedules that requests for new or  
14   increased firm transmission service that would require TBL to construct new  
15   facilities or upgrades to alleviate a capacity constraint may be subject to incremental  
16   cost rates. Such rates would be developed pursuant to section 7(i) of the Northwest  
17   Power Act. TBL will apply the incremental cost rate consistent with FERC's "or"  
18   pricing: the higher of embedded cost or incremental cost would be charged, but not  
19   the sum of the two.

1    **3.11.9 Rate Adjustment Due to FERC Order Under FPA §212**

2    This provision is included in the NT, PTP, RNF, ET, IS, IM, and ACS rate schedules,

3    which are designed to offer Tariff service comparable to BPA's use of the system.

4    These rate schedules, after review by FERC, may be modified to satisfy statutory

5    standards for FERC-ordered transmission service. For customers taking

6    non-FERC-ordered transmission service, the modifications shall be effective only

7    prospectively from the date of the final FERC order that grants final approval of the rate

8    schedule for FERC-ordered transmission.



# **TABLES**



**Table 1**  
**Transmission Revenue Requirements**  
**(\$000)**

	(A) TBL Total	(B) Generation Integration	(C) Network	(D) Delivery		(E)	(F)	(G)	(H) Ancillary Services
				Utility	Industry	Southern	Intertie Eastern		
<b>FY 2002</b>									
1. 1 Gross Plant.....	4,764,523	60,378	3,467,647	67,084	59,320	684,369	123,667	302,058	
1. 2 Lines.....	2,213,732	16,557	1,889,069	3,270	1,534	204,431	98,870		
1. 3 Stations.....	2,248,733	43,821	1,578,578	63,814	57,786	479,938	24,797		
1. 4 Net Plant.....	3,084,547	49,815	2,227,434	55,629	48,859	416,739	80,021	206,050	
1. 5 Operating Expenses.....	228,439	2,399	149,250	4,450	2,521	25,165	2,019	42,635	
1. 6 Generation Inputs.....									
1. 7 Ancillary Services.....	78,572							78,572	
1. 8 Station Service.....	1,723	29	1,163	93	53	377	8		
1. 9 Corp/Bureau.....	3,750		3,526	224					
1.10 Remedial Action Scheme (RAS).....	231						231		
1.11 Gen'l Transfer Agrmnts for nonfederal pwr.....	4,365		4,365						
1.12 Leases.....	5,267		5,188	79					
1.13 Depreciation.....	182,694	2,447	120,424	2,688	2,433	26,717	4,127	23,858	
1.14 Interest Credit from Facilities Sales.....	-752	0	0	-376	-376	0	0	0	
1.15 Interest.....	183,637	2,966	132,609	3,312	2,909	24,810	4,764	12,267	
1.16 Net Revenues for Risk.....	10,751	174	7,763	194	170	1,453	279	718	
1.17 Total Cost.....	698,677	8,015	424,288	10,664	7,710	78,753	11,197	158,050	

**Table 1**  
**Transmission Revenue Requirements**  
**(\$000)**

	(A) TBL Total	(B) Generation Integration	(C) Network	(D) Delivery		(F) Intertie Southern	(G) Eastern	(H) Ancillary Services
				Utility	Industry			
<b>FY 2003</b>								
1.18	Gross Plant.....	4,878,682	60,378	3,647,491	69,323	61,221	688,185	27,059
1.19	Lines.....	2,220,237	16,557	1,989,686	4,249	1,968	205,808	1,968
1.20	Stations.....	2,333,420	43,821	1,657,805	65,074	59,253	482,377	25,091
1.21	Net Plant.....	3,147,250	48,108	2,313,749	55,059	48,557	398,558	76,568
1.22	Operating Expenses.....	222,563	2,340	145,468	4,337	2,456	24,529	1,966
1.23	Generation Inputs.....							
1.24	Ancillary Services.....	78,572						78,572
1.25	Station Service.....	1,723	29	1,163	93	53	377	8
1.26	Corp/Bureau.....	3,717		3,491	226			
1.27	Remedial Action Scheme (RAS).....	231					231	
1.28	Gen'l Transfer Agrmnts for nonfederal pwr.....	4,365		4,365				
1.29	Leases.....	5,267		5,188	79			
1.30	Depreciation.....	195,358	2,527	129,490	2,819	2,560	27,478	4,239
1.31	Interest Credit from Facilities Sales.....	-750	0	0	-375	-375	0	0
1.32	Interest.....	179,620	2,746	132,050	3,142	2,771	22,747	4,370
1.33	Net Revenues for Risk.....	9,829	150	7,226	172	152	1,245	239
1.34	Total Cost.....	700,495	7,792	428,441	10,493	7,617	76,607	10,822
								158,723
<b>Average FY 2002 and FY 2003</b>								
1.35	Total Cost.....	699,586	7,904	426,364	10,579	7,664	77,680	11,010
								158,387

**Table 2**  
**Revenue Credits**

	(A) FY 2002 (\$000)	(B) FY 2003 (\$000)	(C) AVERAGE (\$000)
<b>Transmission Revenue Credit</b>			
2. 1 AC Rate.....	1,375	1,375	1,375
2. 2 CSPE Whlg.....	268	127	198
2. 3 Fiber.....	15,000	19,800	17,400
2. 4 Fiber Depreciation.....	696	696	696
2. 5 Irrigation Pumping Power.....	1,288	1,288	1,288
2. 6 NFP Depreciation.....	3,335	3,335	3,335
2. 7 Operations and Maintenance.....	675	675	675
2. 8 PC Wireless.....	4,070	4,430	4,250
2. 9 Power Factor Penalty Charge.....	5,000	5,000	5,000
2.10 Remedial Action Scheme (RAS).....	597	597	597
2.11 Supplemental Capacity Whlg.....	62	27	45
2.12 TGT.....	10,136	10,136	10,136
2.13 Use of Facilities (UFT).....	5,679	5,679	5,679
2.14 Total.....	48,181	53,165	50,673

		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
		Total	Integration	Network	Utility	Industrial	Southern	Eastern	Ancillary Services
2.15	AC Rate.....	1.00000	-	-	-	-	1.0000	-	-
2.16	CSPE Whlg.....	1.00000	0.0364	0.9497	0.0138	-	-	-	-
2.17	Fiber.....	1.00000	0.0114	0.5307	0.0129	0.0114	0.0953	0.0183	0.3200
2.18	Fiber Depreciation.....	1.00000	0.0114	0.5307	0.0129	0.0114	0.0953	0.0183	0.3200
2.19	Irrigation Pumping Power.....	1.00000	-	1.0000	-	-	-	-	-
2.20	NFP Depreciation.....	1.00000	-	-	-	-	1.0000	-	-
2.21	Operations and Maintenance.....	1.00000	0.0159	0.9674	0.0116	0.0000	0.0051	-	-
2.22	PC Wireless.....	1.00000	-	1.0000	-	-	-	-	-
2.23	Power Factor Penalty Charge.....	1.00000	-	1.0000	-	-	-	-	-
2.24	Remedial Action Scheme (RAS).....	1.00000	-	-	-	-	1.0000	-	-
2.25	Supplemental Capacity Whlg.....	1.00000	0.0370	0.9630	-	-	-	-	-
2.26	TGT.....	1.00000	-	0.0282	-	-	-	0.9718	-
2.27	Use of Facilities (UFT).....	1.00000	0.0012	0.7145	0.0497	-	0.1560	0.0786	-

**Table 2**  
**Revenue Credits**  
**(\$000)**

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
	Generation Integration	Delivery Network	Delivery Utility	Delivery Industrial	Intertie Southern	Intertie Eastern	Ancillary Services
<b>FY 2002 Revenue</b>							
2.28 AC Rate.....	-	-	-	-	1,375	-	-
2.29 CSPE Whlg.....	10	255	4	-	-	-	-
2.30 Fiber.....	172	7,960	194	171	1,429	274	4,800
2.31 Fiber Depreciation.....	8	369	9	8	66	13	223
2.32 Irrigation Pumping Power.....	-	1,288	-	-	-	-	-
2.33 NFP Depreciation.....	-	-	-	-	3,335	-	-
2.34 Operations and Maintenance.....	11	653	8	0	3	-	-
2.35 PC Wireless.....	-	4,070	-	-	-	-	-
2.36 Power Factor Penalty Charge.....	-	5,000	-	-	-	-	-
2.37 Remedial Action Scheme (RAS).....	-	-	-	-	597	-	-
2.38 Supplemental Capacity Whlg.....	2	60	-	-	-	-	-
2.39 TGT.....	-	285	-	-	-	9,850	-
2.40 Use of Facilities (UFT).....	7	4,057	282	-	886	446	-
<b>2.41 Subtotal FY 2002.....</b>	<b>209</b>	<b>23,997</b>	<b>497</b>	<b>179</b>	<b>7,692</b>	<b>10,584</b>	<b>5,023</b>
<b>FY 2003 Revenue</b>							
2.42 AC Rate.....	-	-	-	-	1,375	-	-
2.43 CSPE Whlg.....	5	121	2	-	-	-	-
2.44 Fiber.....	227	10,507	256	225	1,886	362	6,336
2.45 Fiber Depreciation.....	8	369	9	8	66	13	223
2.46 Irrigation Pumping Power.....	-	1,288	-	-	-	-	-
2.47 NFP Depreciation.....	-	-	-	-	3,335	-	-
2.48 Operations and Maintenance.....	11	653	8	0	3	-	-
2.49 PC Wireless.....	-	4,430	-	-	-	-	-
2.50 Power Factor Penalty Charge.....	-	5,000	-	-	-	-	-
2.51 Remedial Action Scheme (RAS).....	-	-	-	-	597	-	-
2.52 Supplemental Capacity Whlg.....	1	26	-	-	-	-	-
2.53 TGT.....	-	285	-	-	-	9,850	-
2.54 Use of Facilities (UFT).....	7	4,057	282	-	886	446	-
<b>2.55 Subtotal FY 2003.....</b>	<b>258</b>	<b>26,737</b>	<b>557</b>	<b>233</b>	<b>8,150</b>	<b>10,672</b>	<b>6,559</b>

**Table 2**  
**Revenue Credits**  
**(\$000)**

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
	Generation Integration	Delivery Network	Delivery Utility	Delivery Industrial	Intertie Southern	Intertie Eastern	Ancillary Services
<b>Two Year Average, FY 2002 and FY 2003</b>							
2.56 AC Rate.....	-	-	-	-	1,375	-	-
2.57 CSPE Whlg.....	7	188	3	-	-	-	-
2.58 Fiber.....	199	9,234	225	198	1,658	318	5,568
2.59 Fiber Depreciation.....	8	369	9	8	66	13	223
2.60 Irrigation Pumping Power.....	-	1,288	-	-	-	-	-
2.61 NFP Depreciation.....	-	-	-	-	3,335	-	-
2.62 Operations and Maintenance.....	11	653	8	0	3	-	-
2.63 PC Wireless.....	-	4,250	-	-	-	-	-
2.64 Power Factor Penalty Charge.....	-	5,000	-	-	-	-	-
2.65 Remedial Action Scheme (RAS).....	-	-	-	-	597	-	-
2.66 Supplemental Capacity Whlg.....	2	43	-	-	-	-	-
2.67 TGT.....	-	285	-	-	-	9,850	-
2.68 Use of Facilities (UFT).....	7	4,057	282	-	886	446	-
2.69 Average of FY 2002 and FY 2003.....	233	25,367	527	206	7,921	10,628	5,791

**Table 3**  
**Rate Development Costs**  
**(\$000/Yr)**

	(A)	(B)	(C)	(D)	(F)	(G)	(H)
	Generation Integration	Delivery Network	Delivery Utility	Intertie Industry	Intertie Southern	Intertie Eastern	Ancillary Services
<b>FY 2002</b>							
3. 1 Unadjusted Costs (Table 1)	8,015	424,288	10,664	7,710	78,753	11,197	158,050
3. 2 Revenue Credits (Table 2)	-209	-23,997	-497	-179	-7,692	-10,584	-5,023
3. 3 DSi Stability Reserves 1/	0	0	0	0	496	0	0
3. 4 Eastern Intertie Adjustment 2/	10	455	11	10	85	-613	42
3. 5 Total	7,816	400,745	10,179	7,541	71,642	0	153,069
<b>FY 2003</b>							
3. 6 Unadjusted Costs (Table 1)	7,792	428,441	10,493	7,617	76,607	10,822	158,723
3. 7 Revenue Credits (Table 2)	-258	-26,737	-557	-233	-8,150	-10,672	-6,559
3. 8 DSi Stability Reserves 1/	0	0	0	0	496	0	0
3. 9 Eastern Intertie Adjustment 2/	2	113	3	2	20	-150	10
3.10 Total	7,537	401,817	9,939	7,386	68,973	0	152,174
<b>Average FY 2002 and FY 2003</b>							
3.11 Unadjusted Costs	7,904	426,364	10,579	7,664	77,680	11,010	158,387
3.12 Revenue Credits	-233	-25,367	-527	-206	-7,921	-10,628	-5,791
3.13 DSi Stability Reserves	0	0	0	0	496	0	0
3.14 Eastern Intertie Adjustment	6	284	7	6	52	-382	26
3.15 Total	7,676	401,281	10,059	7,464	70,307	0	152,622

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1/ Stability reserves credit based on DSi smelter load of 2613 MW times credit of \$0.01582/kW-mo.

2/ Eastern Intertie adjustment (cost - revenue) segmented on Table 1 net plant percentages.





**Table 6**  
**FPT Rate: Network Unit Cost Increase**

	(A)	(B)	(C)	(D)	(E)
	/----- 1996 Current Rates -----/ Source	Amount (varies)	/----- Proposed Rates -----/ Source	Amount (varies)	Change in Network Unit Cost (%)
<b>Ancillary Service Cost (\$000/yr)</b>					
6. 1 Scheduling Control & Dispatch.....			Table 11.1(A+C)	67,782	
6. 2 Generation Supplied Reactive.....			Table 11.2(A+C)	30,912	
<b>Network Power Flows; Network Sales (MW-yr)</b>					
6. 3 Total Transmission System Loading.....	Pwr Flow Case J9710, 1996	29,394	Pwr Flow Case J02CY99, 1999	29,564	
6. 4 Total Network Base Rate Development Megawatts.....		7.14 - 7.10 + (4.6N+4.13N)/2 + 6.12(D)		29,230	
6. 5 Total Southern Intertie Rate Development Megawatts			Table 8.14(C)	5,066	
<b>Rate Development Costs (\$000/yr)</b>					
6. 6 Network Rate Development Costs.....	96TRDS 3.37(B)/5	350,620	Table 3.15(B)	401,281	
6. 7 Network-related Scheduling Control & Dispatch.....		6.1 * 6.4/(6.4+6.5)		57,770	
6. 8 Network-related Generation Supplied Reactive.....		6.2 * 6.4/(6.4+6.5)		26,346	
6. 9 Subtotal Generally Applicable Network Cost.....		6.6 + 6.7 + 6.8		485,397	
6.10 Network Unit Cost (\$/kW-mo).....	6.6(B)/(6.3B*12)	0.994	6.9(D)/(6.3D*12)	1.368	
6.11 Percent Increase in Unit Costs, 2002 Case over 1996 Case	6.10(D)/6.10(B)				37.64%
<b>FPT Revenues (\$000/yr)</b>					
6.12 FPT Sales (MW), FY 2002 and FY 2003.....	Table 4.1 and 4.8	3,508	Table 4.1 and 4.8	3,508	
6.13 FPT Revenues (\$000), FY 2002 and FY 2003.....	FPT-96 * 6.12(B)	31,084	(1+ 6.11(E)) * 6.13(B)	42,785	
6.14 Unit FPT Revenue (\$/kW-mo).....	6.13(B) / (6.12(B)*12)	0.738	6.13(D) / (6.12(D)*12)	1.016	
<b>Attribution of Unit Cost Increase and FPT Revenue (\$000/yr)</b>					
6.15 Network Rate Development Costs.....		6.13 * 6.6(D) / 6.9(D)		35,371	82.67%
6.16 Network-related Scheduling Control & Dispatch.....		6.13 * 6.7(D) / 6.9(D)		5,092	11.90%
6.17 Network-related Generation Supplied Reactive.....		6.13 * 6.8(D) / 6.9(D)		2,322	5.43%
				42,785	100.00%

**Table 7**  
**Calculation of Network Rates: IR, PTP, NCD, NT**

	(A) Units	(B) Source	(C)	(D)	(E)	(F)
			Sales (MW-Years)	(MW-Periods)	Costs (\$000)	Rates (Unit Costs)
<b>Network Costs</b>						
7. 1	Rate Development Costs.....	(\$000/Yr)	Table 3.15(B)		401,281	
7. 2	Revenues from FPT.....	(\$000/Yr)	Table 6.15(D)		-35,371	
7. 3	Base Charge Rate Development Costs.....	(\$000/Yr)	7.1(E) - 7.2(E)			365,910
<b>Network Sales (PTP, IR, NCD, NT_lcp)</b>						
7. 4	Long-term Agreements.....	(MW-yr)	Table 4(N) Avg Annual IR, PTP, NCD	17,877		
7. 5	NT lcp.....	(cp_MW)	(Table 4.6(F) + 4.13(F)) / 2	5,134		
7. 6	Short-term Daily, Block1.....	(MW-yr)	(Table 5.5(N) + 5.11(N)) / 2	477		
7. 7	Short-term Daily, Block2.....	(MW-yr)	(Table 5.6(N) + 5.12(N)) / 2	2,160		
7. 8	Short-term Hourly.....	(aMW)	(Table 5.4(N) + 5.10(N)) / 2	525		
<b>Rate Design Megawatts</b>						
7. 9	Long-term Agreements.....	(MW-yr)	7.4	17,877		
7.10	NT lcp .....	(cp_MW)	7.5	5,134		
7.11	Short-term Daily, Block1.....	(MW-yr)	7.6 * 7/5	668		
7.12	Short-term Daily, Block2.....	(MW-yr)	7.7	2,160		
7.13	Short-term Hourly.....	(aMW)	7.8 * 7/5 * 24/16	1,103		
7.14	Total: Base Rate Divisor.....	(MW)	7.9 + 7.10 + 7.11 + 7.12 + 7.13	<u>26,942</u>		
<b>Network Base Charge</b>						
7.15	Annual.....	(kW-yr)	7.3(E) / 7.14(C)			13.58
7.16	Monthly.....	(\$/kW-mo)	annual / 12			1.132
7.17	Daily Block1 (day 1 through 5).....	(\$/kW-day)	annual / (365*5/7)			0.052
7.18	Daily Block2 (day 6 and beyond).....	(\$/kW-day)	annual / 365			0.037
7.19	Hourly.....	(mills/kWh)	annual/[(8.760/168) * 5 * 16]			3.26
<b>Base Charge Revenues</b>						
7.20	Point-to-Point (PTP).....	(a_cd)	(Table 4(N) lines 3+4+10+11)/2 * 12*7.16		111,544	126,268
7.21	Integration of Resources (IR).....	(a_cd)	(Table 4.2(N)+4.9(N))/2 * 12 * 7.16		47,887	54,208
7.22	Network Contract Demand (NCD).....	(a_cd)	(Table 4.5(N)+4.12(N))/2 * 12 * 7.16		55,088	62,360
7.23	Network Transmission (NT).....	(12cp_MW)	(Table 4.6(N)+4.13(N))/2 * 12 * 7.16		46,968	53,167
7.24	Short-term Network Daily Block1.....	(d_cd)	7.6 * 365 * 7.17		174,265	9,062
7.25	Short-term Network Daily Block2.....	(d_cd)	7.7 * 365 * 7.18		788,513	29,175
7.26	Short-term Network Hourly.....	(GWh)	7.8 * 8.76 * 7.19		4,601	<u>14,999</u>
7.27	Subtotal Base Charge.....	(\$000)				349,239

**Table 7**  
**Calculation of Network Rates: IR, PTP, NCD, NT**

	(A) Units	(B) Source	(C)	(D)	(E)	(F)
			Sales (MW-Years)	(MW-Periods)	Costs (\$000)	Rates (Unit Costs)
<b>Load Shaping Revenue Requirement</b>						
7.28	Base Charge Rate Development Costs.....	(\$000)	7.3 (E)		365,910	
7.29	Base Charge Revenues.....	(\$000)	7.27 (E)		349,239	
7.30	Load Shaping Costs.....	(\$000)	7.28(E) - 7.29(E)		16,671	
7.31	Load Shaping Sales.....	(cp_MW-yr)	(Table 4.15(N) + 4.16(N)) / 2	4,266		
7.32	Load Shaping Charge.....	(\$/kW-yr)	7.30(E) / 7.31(C)			3.91
7.33	Load Shaping Charge.....	(\$/kW-mo)	7.32 / 12			0.326
7.34	<b>Total Charge: Base plus Load Shaping</b>	(\$/kW-mo)	7.16 + 7.33			1.458

**Table 8**  
**Southern Intertie Rate Calculation**

	(A)	Units	Source	(C)	(D)	(E)
				Annual	Oct-Mar	Apr-Sep
				(MW-mos)	(MW-mos)	North to South
<b>Intertie Costs</b>						
8. 1	Rate Development Costs.....	(\$000/Yr)	Table 3.15(F)	70,307		
<b>Southern Intertie Sales</b>						
8. 2	Long-term Agreements, N-S.....	(MW-Yr)	(Table 4(N) lines 21+26-18-23)/2	3,178	18,475	19,659
8. 3	Long-term Agreements, S-N.....	(MW-Yr)	(Table 4.18(N) + 4.23(N)) / 2	271	0	0
8. 4	Overstatement of Short-Term.....	(MW-Yr)	(Table 5.19(N) + 5.26(N)) / 2	-268	-1,254	-1,960
8. 5	Short-term Daily Block1.....	(MW-Yr)	(Table 5.17(N) + 5.24(N)) / 2	139	510	1,162
8. 6	Short-term Daily Block2.....	(MW-Yr)	(Table 5.18(N) + 5.25(N)) / 2	917	2,228	8,778
8. 7	Short-term Hourly.....	(aMW)	(Table 5.16(N) + 5.23(N)) / 2	368	2,447	1,968
<b>Southern Intertie Rate Design Megawatts</b>						
8. 8	Long-term Agreements, N-S.....	(MW-Yr)	8.2	3,178	18,475	19,659
8. 9	Long-term Agreements, S-N.....	(MW-Yr)	8.3	271	0	0
8.10	Overstatement of Short-Term.....	(MW-Yr)	8.4	-268	-1,254	-1,960
8.11	Short-term Daily Block1.....	(MW-Yr)	8.5 * 7/5	195	713	1,627
8.12	Short-term Daily Block2.....	(MW-Yr)	8.6	917	2,228	8,778
8.13	Short-term Hourly.....	(aMW)	8.7 * 7/5 * 24/16	773	5,139	4,132
8.14	Total.....	(MW)		5,066	25,301	32,236
<b>South to North, Year Around IS Rate</b>						
8.15	Annual.....	(\$/kW-yr)	8.1 / 8.14	13.88		
8.16	Monthly.....	(\$/kW-mo)	annual / 12	<b>1.157</b>		
8.17	Daily Block1 (day 1 through 5)....	(\$/kW-day)	annual / (365*5/7)	<b>0.053</b>		
8.18	Daily Block2 (day 6 and beyond)	(\$/kW-day)	annual / 365	<b>0.038</b>		
8.19	Hourly.....	(mills/kWh)	annual /[(8.760/168) * 5 * 16]	<b>3.33</b>		
<b>South to North Revenue</b>						
8.20	Monthly.....	(\$000)	8.3(C)*12 * 8.16	3,763		
<b>Summer Season, N-S, Rate Design Megawatts</b>						
8.21	75% of Winter, Oct - Mar.....	(MW-mos)	8.14(D) * .75	18,976		
8.22	Summer, Apr - Sep.....	(MW-mos)	8.14(E)	<b>32,236</b>		
8.23	Total.....	(MW-mos)	8.21 + 8.22	<b>51,212</b>		
<b>North to South, Summer Season Unit Cost, expressed annually</b>						
8.24	Annual.....	(\$/kW-yr)	8.25 * 12	15.59		
<b>North to South, Summer (Apr-Sep) Season IS Rate</b>						
8.25	Monthly, April through September	(\$/kW-mo)	(8.1(C)-8.20(C)) / 8.23	<b>1.299</b>		
8.26	Daily Block1 (day 1 through 5)....	(\$/kW-day)	annual / (365*5/7)	<b>0.060</b>		
8.27	Daily Block2 (day 6 and beyond)	(\$/kW-day)	annual / 365	<b>0.043</b>		
8.28	Hourly.....	(mills/kWh)	annual /[(8.760/168) * 5 * 16]	<b>3.74</b>		
<b>North to South, Winter (Oct-Mar) Season IS Rate</b>						
8.29	Monthly, October through March....	(\$/kW-mo)	Summer Monthly * .75	<b>0.974</b>		
8.30	Daily Block1 (day 1 through 5)....	(\$/kW-day)	Summer Daily Block1 * .75	<b>0.045</b>		
8.31	Daily Block2 (day 6 and beyond)	(\$/kW-day)	Summer Daily Block2 * .75	<b>0.032</b>		
8.32	Hourly.....	(mills/kWh)	Summer Hourly * .75	<b>2.81</b>		

**Table 9**  
**Montana Intertie and Eastern Intertie Rate Calculations**

		(A)	(B)	(C)
		Source	Units	Amount
<b>Montana Intertie (IM) Rate Calculation</b>				
9. 1	TBL's Payments in the Calculation of TGT 1/.....	81BP-90210 Exhibit D, Rev. D, 1998	(\$000/yr)	2,751
9. 2	TBL Montana Intertie Share.....	same	(MW-yr)	185
9. 3	IM-02 Annual Unit Cost.....	9.1 / 9.2	(\$/kW-yr)	14.87
9. 4	IM-02 Monthly Demand Charge.....	annual / 12	(\$/kW-mo)	<b>1.239</b>
9. 5	IM-02 Daily Block1 Demand Charge.....	annual / (365*5/7)	(\$/kW-day)	<b>0.057</b>
9. 6	IM-02 Daily Block2 Demand Charge.....	annual / 365	(\$/kW-day)	<b>0.041</b>
9. 7	IM-02 Hourly Rate.....	annual /[(8.760/168) * 5 * 16]	(mills/kWh)	<b>3.56</b>
 <b>Eastern Intertie (IE) Rate Calculation 2/</b>				
9. 8	Eastern Intertie Costs.....	Table 1, Col(G)	(\$000/yr)	11,010
9. 9	TGT Rate Billing Determinant.....	81BP-90210 Exhibit D, Rev. D, 1998	(MW-yr)	1,915
9.10	Nominal Eastern Intertie Unit Cost.....	9.8 / 9.9	(\$/kW-yr)	5.75
9.11	Eastern Intertie Rate.....	9.10 /[(8.760/168) * 5 * 16]	(mills/kWh)	<b>1.38</b>

-----  
1/ The Montana Intertie runs from Garrison to Broadview.

2/ The Eastern Intertie is the western (Townsend to Garrison) portion of the Montana Intertie. IE rate is used to credit the TGT rate on an anticipated basis. It also may be used by the six participants in association with non-Colstrip power.

**Table 10**  
**Delivery Rate Calculations:**  
**Utility and DSI**

		(A) Units	(B) Source	(C) Amount
<b>Utility Delivery Charge</b>				
10. 1	Rate Development Costs.....	(\$000/Yr)	Table 3(C)	10,059
10. 2	Billing Determinant.....	(cp_MW-yr)	Appendix C	645
10. 3	Utility Delivery Charge.....	(\$/kW-yr)	10.1(C) / 10.2(C)	15.59
10. 4	Utility Delivery Charge.....	(\$/kW-mo)	10.3(C) / 12	<b>1.299</b>
<b>Industry Delivery Charge</b>				
10. 5	Segment Costs.....	(\$000)	Table 3.15(F)	7,464
10. 6	UFT Revenues.....	(\$000)	Appendix G.3(E)	6,237
10. 7	Adjustment Factor.....	(decimal)	10.5 / 10.6	<b>1.197</b>

**Table 11**  
**Ancillary Service Rates**

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
			FPT				/-----	R A T E S			
	Avg RRQ	Revenue Credits 1/	Credits 5/	Adj RRQ	Sales	Annual	Monthly	Daily 1	Daily 2	Hourly	
	(\$000)	Alloc. %	(\$000)	(\$000)	(\$000)	(MW-Yr)	(\$/kW-yr)	(\$/kW-mo)	(\$/kW-day)	(\$/kW-day)	(mills/kWh)
<b>Ancillary Service Costs</b>											
11. 1	Scheduling Control & Dispatch 2/.....	72,105	75%	-4,323	-5,092	62,690	30,788	2.04	0.170	0.008	0.005
11. 2	Generation Supplied Reactive 2/.....	31,092	3%	-180	-2,322	28,590	29,663	0.96	0.080	0.004	0.003
11. 3	Regulation & Frequency Response.....	17,129	22%	-1,261		15,868	6,109				0.30
11. 4	Energy Imbalance.....	0	0%	0		0	none				100.00
11. 5	Operating Reserves - Spinning 3/.....	19,037	0%	0		19,037	263				8.27
11. 6	Operating Reserves - Supplemental 3/	19,024	0%	0		19,024	263				8.27
11. 7	Total Ancillary.....	158,387	100%	-5,765	-7,414	145,208					
<b>Transmission Sales (Rate Design MW)</b>											
11. 8	Network (excluding FPT).....	25,722		6.4 - 6.12							
11. 9	Southern Intertie.....	5,066		8.14(C)							
11.10	Total Sales.....	30,788		11.8 + 11.9							
11.11	Less Gen Reactive Self Supply 4/.....	-1,125									
11.12	Net Sales.....	29,663		11.10 + 11.11							
<b>Reserve Obligations</b>											
11.13	PBL 5% Reserve Obligation (hydro)....	464		WPRDS WP-02-E-BPA-05 4.1.2.3							
11.14	PBL 7% Reserve Obligation (thermal)	61		WPRDS WP-02-E-BPA-05 4.1.2.4							
11.15	PBL Total Reserve Obligation.....	525		WPRDS WP-02-E-BPA-05 4.1.2.5							
11.16	PBL Spinning Reserve Obligation.....	263		11.15 / 2							
11.17	PBL Supplemental Reserve Obligation	263		11.15 / 2							
<b>Control Area Load</b>											
11.18	Control Area Load (Avg 98/99).....	5,700									
11.19	CA Load w/ Load Growth.....	6,109									

1/ Revenue Credits and Eastern Intertie Adjustment from Table 3. Allocation based on distribution of fiber investment from Segmentation Study (TR-02-E-BPA-02), Documentation Chapter 8.

2/ For Scheduling/Disp. and Generation Supplied Reactive, Daily 1 (day 1-5) is annual/(365\*5/7), Daily 2 (day 6 and beyond) is annual/(365). Hourly is annual/((8.760/168)\*5\*16).

3/ Rate will be applied to the reserve obligation of load served by generation in the BPA control area.

4/ Estimated 4500MW of nonfederal generation which is directly connected to the FCRTS, and is west of the Cascades or near the head of the Southern Intertie. Of this, assumed 50% would be eligible to self supply generation reactive. Of those eligible, assumed a 50% reduction in billing demand.

5/ Table 6.16(D) and 6.17(D).

**Table 12**  
**Revenues from FPT**  
**(*\$000*)**

Resource	Contract	Rate	Demand (MW)	Compensation Factors		Revenues		%Change (E)/(D) (%)	
				Current 96 (\$/kW-yr)	Proposed (\$/kW-yr)	Current 96 (\$000/yr)	Proposed (\$000/yr)		
<b>Avista (WWP)</b>									
12.01	WNP-3	92186	FPT.1	32.2	16.920	23.277	545	750	38%
12.02	Avista System (GTA)	91970	FPT.1	65.3	8.310	11.481	542	749	38%
12.03				97.5			1,088	1,499	38%
<b>Cowlitz Co PUD</b>									
12.04	Priest Rapids	13520	FPT.3	17.0	10.300	14.255	175	242	38%
12.05	Swift	92043	FPT.1	77.0	3.990	5.491	307	423	38%
12.06	Wanapum	00025	FPT.1	21.0	10.650	14.654	224	308	38%
12.07				115.0			706	973	38%
<b>Douglas Co PUD</b>									
12.08	Nilles Corner	90066	FPT.1	1.8	4.940	6.793	9	12	38%
12.09	Wells	92389	FPT.1	4.5	5.540	7.630	25	34	38%
12.10				6.3			34	47	38%
<b>Okanogan Co PUD</b>									
12.11	Wells	90013	FPT.1	-	0.000	0.000	-	-	N.A.
<b>PacifiCorp</b>									
12.12	Centralia	09228	FPT.3	638.0	6.050	8.327	3,860	5,313	38%
12.13	Clatsop	14612	FPT.3	7.0	14.050	19.343	98	135	38%
12.14	Colstrip	90168	FPT.1	140.0	18.400	25.316	2,576	3,544	38%
12.15	Hermiston	94316	FPT.1	490.0	12.220	16.819	5,988	8,241	38%
12.16	Midpoint-Medford	94333	FPT.1	600.0	13.910	19.134	8,346	11,481	38%
12.17	Priest Rapids	90100	FPT.1	235.0	2.850	3.927	670	923	38%
12.18	PSW(DC)/PPL	94280	FPT.1	200.0	4.070	5.598	814	1,120	38%
12.19	Swift	92269	FPT.1	222.0	4.340	5.971	963	1,326	38%
12.20	Wanapum	26811	FPT.1	269.0	10.400	14.314	2,798	3,851	38%
12.21	Widco	92325	FPT.1	17.3	7.350	10.119	127	175	38%
12.22				2,818.3			26,240	36,107	38%
<b>Pend Orille Co PUD</b>									
12.23	Boundary POI	92488	FPT.1	32.0	5.510	7.584	176	243	38%
12.24	Box Canyon	90006	FPT.1	-	0.000	0.000	-	-	N.A.
12.25				32.0			176	243	38%
<b>Portland General Electric</b>									
12.26	Boardman Unit 1	92260	FPT.1	75.0	4.990	6.873	374	515	38%
12.27	WNP-3	92187	FPT.1	53.7	8.820	12.148	474	652	38%
12.28				128.7			848	1,168	38%
<b>Power Resources Coop (PNCG)</b>									
12.29	Boardman	94151	FPT.1	50.0	4.570	6.293	229	315	38%
<b>Puget Sound Power and Light</b>									
12.30	WNP-3	92185	FPT.1	32.2	7.320	10.085	236	325	38%
<b>Tacoma Public Utilities</b>									
12.31	Priest Rapids	13512	FPT.3	71.1	8.530	11.824	606	841	39%
12.32	Centralia	94304	FPT.1	107.0	4.550	6.270	487	671	38%
12.33	NFP	93936	FPT.1	49.3	8.830	12.157	435	599	38%
12.34				227.4			1,528	2,110	38%
12.35	<b>TOTAL</b>			<b>3,507.4</b>			<b>31,084</b>	<b>42,787</b>	<b>38%</b>

**Table 13**  
Summary of Rate Level Changes

		(A)	(C)	(D)	
		Current Units	1996 Rates	Proposed 2002 Rates	Percent Change (C)/(A) (percent)
<b>FPT-02.1 and FPT-02.3</b>					
13. 1	M-G Distance.....	(\$/kW-mi-yr)	0.0405	0.0557	37.5%
13. 2	M-G Miscellaneous Facilities.....	(\$/kW-yr)	2.31	3.18	37.7%
13. 3	M-G Terminal.....	(\$/kW-yr)	0.47	0.65	38.3%
13. 4	M-G Interconnection Terminal.....	(\$/kW-yr)	0.42	0.58	38.1%
13. 5	S-S Transformation.....	(\$/kW-yr)	4.35	5.99	37.7%
13. 6	S-S Interconnection Terminal.....	(\$/kW-yr)	1.19	1.64	37.8%
13. 7	S-S Intermediate Terminal.....	(\$/kW-yr)	1.68	2.31	37.5%
13. 8	S-S Distance.....	(\$/kW-mi-yr)	0.3980	0.5478	37.6%
13. 9	Overall FPT Rate.....	(\$/kW-yr)	8.86	12.19	37.6%
13.10	Overall FPT Rate.....	(\$/kW-mo)	0.738	1.0160	37.6%
<b>IR-02/NCD-02</b>					
13.11	Demand.....	(\$/kW-mo)	1.000	1.132	13.2%
<b>NT-02</b>					
13.12	Base Rate (\$/kW-mo).....	(\$/kW-mo)	1.000	1.132	13.2%
13.13	Load Shaping (\$/kW-mo).....	(\$/kW-mo)	0.539	0.326	-39.5%
13.14	Base plus Load Shaping.....	(\$/kW-mo)	1.539	1.458	-5.3%
<b>PTP-02</b>					
13.15	Demand.....	(\$/kW-mo)	1.000	1.132	13.2%
13.16	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	0.046	0.052	13.0%
13.17	Daily Block 2 (day 6 and beyond).....	(\$/kW-day)	0.033 1/	0.037	12.1%
13.18	Hourly.....	(mills/kWh)	2.52	3.26	29.4%
<b>PTP and NT Unauthorized Increase Charge</b>					
13.19	Demand.....	(\$/kW-mo)	12.00	6.79	-43.4%
<b>Utility Delivery</b>					
13.20	Demand.....	(\$/kW-mo)	0.750	1.299	73.2%
<b>IS-02</b>					
<b>North to South</b>					
<b>Winter (Oct-Mar)</b>					
13.21	Demand.....	(\$/kW-mo)	1.274	0.974	-23.5%
13.22	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	0.059	0.045	-23.5%
13.23	Daily Block 2 (day 6 and beyond)....	(\$/kW-day)	0.042 1/	0.032	-23.8%
13.24	Hourly.....	(mills/kWh)	2.54	2.81	10.6%
<b>Summer (Apr-Sep)</b>					
13.25	Demand.....	(\$/kW-mo)	1.274	1.299	2.0%
13.26	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	0.059	0.060	2.0%
13.27	Daily Block 2 (day 6 and beyond)....	(\$/kW-day)	0.042 1/	0.043	2.4%
13.28	Hourly.....	(mills/kWh)	2.54	3.74	47.2%
<b>South to North, Year Around</b>					
13.29	Demand.....	(\$/kW-mo)	1.274	1.157	-9.2%
13.30	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	0.059	0.053	-9.9%
13.31	Daily Block 2 (day 6 and beyond)....	(\$/kW-day)	0.042 1/	0.038	-9.5%
13.32	Hourly.....	(mills/kWh)	2.54	3.33	31.1%

**Table 13**  
**Summary of Rate Level Changes**

		(A)	(C)	(D)	
		Units	Current 1996 Rates	Proposed 2002 Rates	Percent Change (C)/(A) (percent)
<b>IM-02</b>					
13.33	Demand.....	(\$/kW-mo)	1.234	1.239	0.4%
13.34	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	0.057	0.057	0.0%
13.35	Daily Block 2 (day 6 and beyond).....	(\$/kW-day)	0.041 1/	0.041	0.0%
13.36	Hourly.....	(mills/kWh)	3.56	3.56	0.0%
<b>Intertie East</b>					
13.37	IE-02.....	(mills/kWh)	1.68	1.38	-17.9%
<b>Power Factor Penalty Charge</b>					
13.38	Demand -- Lagging.....	(\$/kVAr-mo)	0.08	0.28	250.0%
13.39	Demand -- Leading.....	(\$/kVAr-mo)	0.06	0.24	300.0%
13.40	Energy -- Lagging or Leading.....	(\$/kVAr-hour)	0.53	n.a.	
<b>Scheduling Control and Dispatch</b>					
13.41	Demand.....	(\$/kW-mo)	n.a.	0.170	
13.42	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	n.a.	0.008	
13.43	Daily Block 2 (day 6 and beyond).....	(\$/kW-day)	n.a.	0.005	
13.44	Hourly.....	(mills/kWh)	n.a.	0.49	
<b>Generation Supplied Reactive</b>					
13.45	Demand.....	(\$/kW-mo)	n.a.	0.080	
13.46	Daily Block 1 (day 1 thru 5).....	(\$/kW-day)	n.a.	0.004	
13.47	Daily Block 2 (day 6 and beyond).....	(\$/kW-day)	n.a.	0.003	
13.48	Hourly.....	(mills/kWh)	n.a.	0.23	
<b>Regulation and Frequency Response</b>					
13.49	Hourly.....	(mills/kWh)	n.a.	0.30	
<b>Energy Imbalance</b>					
13.50	Hourly.....	(mills/kWh)	n.a.	100.00	
<b>Operating Reserves</b>					
13.51	Spinning.....	(mills/kWh)	n.a.	8.27	
13.52	Supplemental.....	(mills/kWh)	n.a.	8.27	

1/ 1996 weekly rate divided by seven.

**Table 14**  
**Transmission Revenue Summary**  
(\$000)

		Rate	(A) FY 2002	(B) FY 2003	(C) 2-Yr Total
<b>Service</b>					
<b>General Transmission</b>					
14. 1	Formula Power Transmission.....	FPT-02	42,787	42,787	85,573
14. 2	Integration of Resources.....	IR-02	54,208	54,208	108,417
14. 3	Network Transmission, Base.....	NT-02	51,354	54,980	106,335
14. 4	Network Transmission, Load Shaping.....	NT-02	15,749	17,629	33,378
14. 5	Network Contract Demand.....	NCD-02	62,359	62,359	124,717
14. 6	Point to Point, Long-term Contracts.....	PTP-02	126,024	126,513	252,537
14. 7	Point to Point, Daily Block 1.....	PTP-02	9,066	9,066	18,132
14. 8	Point to Point, Daily Block 2.....	PTP-02	29,203	29,203	58,406
14. 9	Point to Point, Hourly.....	PTP-02	14,987	14,987	29,973
14.10	<b>Subtotal General Rates, Network</b>		<b>405,737</b>	<b>411,731</b>	<b>817,468</b>
14.11	Southern Intertie, Long-term Contracts.....	IS-02	49,648	44,940	94,587
14.12	Southern Intertie, Daily Block 1.....	IS-02	2,443	2,443	4,885
14.13	Southern Intertie, Daily Block 2.....	IS-02	11,893	11,893	23,786
14.14	Southern Intertie, Hourly.....	IS-02	8,829	8,829	17,658
14.15	<b>Subtotal General Rates, Southern Intertie</b>		<b>72,812</b>	<b>68,104</b>	<b>140,916</b>
14.16	Montana Intertie.....	IM-02	0	0	0
14.17	Intertie East.....	IE-02	0	0	0
14.18	DSI Delivery Charge.....	UFT-02	7,368	7,559	14,927
14.19	Utility Delivery Charge.....	UD	9,981	10,129	20,110
14.20	<b>Subtotal General Transmission Rates</b>		<b>495,898</b>	<b>497,524</b>	<b>993,421</b>
<b>Other</b>					
14.21	Annual Cost Rate.....		1,375	1,375	2,751
14.22	Columbia Storage Power Exchange.....		268	127	395
14.23	Fiber.....		15,000	19,800	34,800
14.24	Fiber Depreciation.....		696	696	1,392
14.25	Generation Integration.....		7,816	7,537	15,353
14.26	Irrigation Pumping Power.....		1,288	1,288	2,577
14.27	Nonfederal Participation Depreciation.....		3,335	3,335	6,670
14.28	Operations and Maintenance.....		675	675	1,350
14.29	Personal Communications Wireless.....		4,070	4,430	8,500
14.30	Power Factor Penalty Charge.....		5,000	5,000	10,000
14.31	Remedial Action Scheme.....		597	597	1,194
14.32	Supplemental Capacity Wheeling.....		62	27	89
14.33	Townsend Garrison Transmission.....		10,136	10,136	20,271
14.34	Use of Facilities.....		5,679	5,679	11,358
14.35	<b>Subtotal Other Transmission</b>		<b>55,997</b>	<b>60,702</b>	<b>116,699</b>
<b>Ancillary</b>					
14.36	Scheduling Control & Dispatch.....		62,215	62,193	124,408
14.37	Generation Supplied Reactive.....		28,753	28,758	57,511
14.38	Regulation & Frequency Response.....		16,036	16,036	32,072
14.39	Energy Imbalance.....		0	0	0
14.40	Operating Reserves - Spinning.....		18,994	18,994	37,988
14.41	Operating Reserves - Supplemental .....		18,994	18,994	37,988
14.42	<b>Subtotal Ancillary Services</b>		<b>144,991</b>	<b>144,975</b>	<b>289,967</b>
14.43	<b>Total Revenue</b>		<b>696,886</b>	<b>703,201</b>	<b>1,400,087</b>
14.44	<b>Total TBL Table 1 Costs</b>		<b>698,677</b>	<b>700,495</b>	<b>1,399,172</b>
14.45	<b>Revenue Longfall (Shortfall)</b>		<b>(1,791)</b>	<b>2,706</b>	<b>915</b>



# **APPENDICES**



## APPENDIX A

### **Long-Term Transmission Demands**







**Appendix A**  
**Long-term Transmission Demands**  
**(Megawatts)**

**FY 2002**

	CUSTOMER	RATE	CONTRACT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ANNUAL
90	BONNEVILLE POWER BUSINESS....	IS	96MS-95363	1,760.0	1,760.0	1,760.0	1,760.0	1,760.0	2,155.0	2,155.0	2,155.0	2,155.0	2,155.0	2,155.0	1,755.0	1,924.2
91	BONNEVILLE POWER BUSINESS....	IS	96MS-96060	405.0	317.0	317.0	317.0	317.0	317.0	420.0	448.0	462.0	462.0	462.0	462.0	380.1
92	CONSOLIDATED ENERGY SERVI....	IS	00TX-CONSOLID_LADWP	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
93	HERMISTON POWER PARTNERSH....	IS	98TX-10154	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0
94	IDAHo POWER COMPANY.....	IS	91BP-93094	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
95	KLAMATH FALLS, CITY OF.....	IS	99TX-KFALLS_GENPROJ	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0
96	PACIFIC POWER & LIGHT COM....	IS	MS79-94BP94280	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
97	PACIFIC POWER & LIGHT COM....	IS	MS79-94BP94285	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0
98	TACOMA, CITY OF.....	IS	MS79-94BP92490	33.0	33.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
99	TOTAL IS.....			3,491.0	3,403.0	3,370.0	3,370.0	3,370.0	3,370.0	3,765.0	3,868.0	3,896.0	3,910.0	3,910.0	3,543.0	3,605.5





**Appendix A**  
**Long-term Transmission Demands**  
**(Megawatts)**

**FY 2003**

CUSTOMER	RATE	CONTRACT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ANNUAL
189 BONNEVILLE POWER BUSINESS....	IS	96MS-95363	1,755.0	1,755.0	1,755.0	1,555.0	1,555.0	1,555.0	1,555.0	1,555.0	1,555.0	1,500.0	1,500.0	1,500.0	1,591.2
190 BONNEVILLE POWER BUSINESS....	IS	96MS-96060	419.0	331.0	331.0	331.0	331.0	331.0	434.0	462.0	498.0	498.0	498.0	498.0	399.6
191 CONSOLIDATED ENERGY SERVI....	IS	00TX-CONSOLID_LADWP	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
192 HERMISTON POWER PARTNERSH....	IS	98TX-10154	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0	536.0
193 IDAHO POWER COMPANY.....	IS	91BP-93094	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
194 Klamath Falls, City Of.....	IS	99TX-KFALLS_GENPROJ	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0
195 PACIFIC POWER & LIGHT COM....	IS	MS79-94BP94280	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
196 PACIFIC POWER & LIGHT COM....	IS	MS79-94BP94285	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0	164.0
197 TACOMA, CITY OF.....	IS	MS79-94BP92490	33.0	33.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
TOTAL IS.....			3,500.0	3,412.0	3,379.0	3,179.0	3,179.0	3,179.0	3,179.0	3,282.0	3,310.0	3,291.0	3,291.0	3,324.0	3,292.0

## APPENDIX B

### **NT Base and Load Shaping Sales**























**Appendix B**  
**NT Base and Load Shaping Sales**  
**FY 2002 and FY 2003**  
**(cp MW)**

	<b>Customer Name</b>	<b>No.</b>	<b>Agent</b>	<b>Rate</b>	<b>Source</b>	<b>FYear</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>	<b>JUL</b>	<b>AUG</b>	<b>SEP</b>	<b>ANNUAL</b>
441	WELLS RURAL ELECTRIC COOP	396		Base	TBL load forecast	2003	85.96	88.81	86.46	88.95	93.86	76.62	82.30	91.30	79.93	77.62	80.16	88.40	85.03
442	WELLS RURAL ELECTRIC COOP	396		LS	TBL load forecast	2003	85.96	88.81	86.46	88.95	93.86	76.62	82.30	91.30	79.93	77.62	80.16	88.40	85.03
443	WEST OREGON ELECTRIC COOP	397		Base	TBL load forecast	2002	13.91	18.35	18.97	19.69	17.95	13.82	14.40	10.58	8.46	9.53	9.42	10.04	13.76
444	WEST OREGON ELECTRIC COOP	397		LS	TBL load forecast	2002	13.91	18.35	18.97	19.69	17.95	13.82	14.40	10.58	8.46	9.53	9.42	10.04	13.76
445	WEST OREGON ELECTRIC COOP	397		Base	TBL load forecast	2003	14.22	18.76	19.39	20.12	18.35	14.13	14.72	10.82	8.65	9.74	9.63	10.27	14.07
446	WEST OREGON ELECTRIC COOP	397		LS	TBL load forecast	2003	14.22	18.76	19.39	20.12	18.35	14.13	14.72	10.82	8.65	9.74	9.63	10.27	14.07
447	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
448	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
449	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90
450	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90
451	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
452	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
453	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90
454	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90
455	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
456	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2002	23.26	20.81	23.92	31.56	25.31	16.60	22.87	23.79	23.21	23.22	24.99	24.43	23.66
457	WHATCOM COUNTY PUD NO 1	298		Base	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90
458	WHATCOM COUNTY PUD NO 1	298		LS	TBL load forecast	2003	23.50	21.02	24.16	31.88	25.56	16.77	23.10	24.03	23.44	23.46	25.25	24.68	23.90



## APPENDIX C

### **Utility Delivery Billing Determinants**



## Appendix C

### Utility Delivery Billing Determinants

12CP Megawatts

	Customer		Delivery Point		
	Name	No.	Name	kV	MW
1	Ashland, City Of	103	968 Mountain Avenue	12.5	8.76
2	Bandon, City Of	104	44 Bandon	12.5	6.34
3			386 Langlois	12.5	0.56
4			992 Two Mile Road	12.5	2.83
5					9.73
6	Benton REA	303	71 Blackrock	115.0	0.24
7			284 Grandview	12.5	3.59
8			418 Mabton	12.5	2.44
9			884 Rattle Snake	115.0	1.47
10			769 White Swan	12.5	3.81
11					11.55
12	Big Bend Electric	306	46 Baxter	13.8	5.22
13			175 Delight	24.9	0.83
14			195 Eagle Lake	13.8	6.13
15			216 Eltopia	13.8	3.30
16			272 Glade	13.8	5.03
17			310 Hatton	24.9	6.02
18			442 Mesa	13.8	6.09
19			562 Ralston	24.9	0.54
20			582 Ringold	13.8	3.55
21			586 Ritzville	24.9	4.01
22			621 Schrag	24.9	3.79
23			624 Scooteney	13.8	2.80
24			13.8 kV		47.33
25	Blachly-Lane Electric	309	754 Walton	12.5	0.96
26	Bureau of Mines	410	15 Albany	12.5	0.65
27	Cascade Locks, City Of	115	901 Acton	13.8	0.54
28			115 Cascade Locks	13.8	2.64
29					3.18
30	Central Electric Cooperative	312	298 Hampton	25.0	1.12
31	Central Lincoln PUD	207	263 Gardiner	13.8	22.08
32			425 Mapleton	12.5	3.89
33			572 Reedsport	12.5	10.33
34					36.30
35	Cheney, City Of	123	129 Cheney	13.8	12.55
36			253 Four Lakes	13.8	6.63
37					19.18
38	Clark PUD	216	103 Camas	12.5	27.32
39			107 Carborundum	12.5	22.69
40			127 Chelatchie	12.5	9.08
41			1351 Fishers Road	12.5	21.09
42			448 Mill Plain	12.5	18.54
43			1341 Van Ship	12.5	19.31
44			12.5		118.02
45	Clatskanie	219	134 Clatskanie	12.5	8.89
46	Clearwater Power	315	547 Potlatch	24.9	4.59
47	Columbia Basin Electric	318	342 Boardman (lone)	12.5	14.16

**Appendix C**  
**Utility Delivery Billing Determinants**  
**12CP Megawatts**

	Customer		Delivery Point		
	Name	No.	No. Name	KV	MW
48	Columbia Power	321	1334 Spray	24.9	0.70
49	Columbia REA	324	98 Burbank	13.8	2.28
50			661 Stateline	69.0	2.65
51			672 Sun Harbor	24.9	2.69
52			751 Walla Walla	12.5	4.39
53					12.02
54	Columbia River PUD	221	829 St. Helens 12.5	12.5	4.86
55	Consumers Power Inc.	327	100 Burnt Wood	25.0	1.65
56			260 Froman	115.0	5.87
57			460 Monmouth	12.5	1.91
58			489 North Butte	12.5	1.36
59			721 Tumble Creek	24.9	2.69
60					13.48
61	Coos-Curry Electric	330	43 Bandon	12.5	1.91
62			387 Langlois	12.5	1.44
63			492 Norway	12.5	2.36
64			543 Port Orford	12.5	4.16
65					9.87
66	Coulee Dam, City Of	125	158 Coulee Dam	12.0	2.99
67	Douglas Electric Coop.	333	187 Drain	12.5	2.73
68			264 Gardiner	13.8	0.50
69			573 Reedsport	12.5	0.66
70					3.90
71	Drain, City Of	128	186 Drain	12.5	4.00
72	Eatonville, Town Of	131	918 Lynch Creek	12.5	4.45
73	Flathead Electric	339	886 Haskell	24.9	2.39
74	Forest Grove, City Of	142	799 Filbert	12.5	10.43
75			247 Forest Grove	12.5	16.92
76			690 Thatcher Junction	12.5	11.51
77					38.86
78	Franklin PUD	233	581 Ringold	13.8	3.37
79	Grant County PUD	238	281 Grand Coulee #1	12.0	3.85
80	Hood River Electric	342	847 Hood River	12.5	1.31
81			520 Parkdale	12.5	6.17
82			782 Woody Guthrie	12.5	8.93
83					16.41
84	Idaho Co. L&P	345	285 East Grangeville	13.8	2.48

## Appendix C

### Utility Delivery Billing Determinants

12CP Megawatts

	Customer		Delivery Point		
	Name	No.	Name	kV	MW
85	Inland Power & Light	348	125 Chambers	13.8	1.61
86			130 Cheney (Inland)	13.8	1.40
87			172 Deer Park	12.5	3.98
88			252 Four Lakes	13.8	3.42
89			262 Gaffney	12.5	0.49
90			300 Hangman	13.8	4.61
91			348 Jerita	12.5	0.73
92			390 Larene	12.5	1.65
93			431 Mayview	13.2	1.67
94			486 Newport	13.8	1.09
95			540 Pomeroy	12.5	0.53
96			583 Riparia	13.8	1.30
97					22.46
98	Lane Electric Cooperative	354	991 Hideaway	12.5	2.13
99	Lincoln Electric (mont.)	357	905 Stillwater	24.9	3.06
100			710 Trego	24.9	11.64
101					14.69
102	Lower Valley Power	360	519 Palisades	12.5	0.00
103			837 Swan Valley	12.5	1.32
104					1.32
105	Mason County PUD No. 1	257	191 Duckabush	12.5	2.81
106	Mason County PUD No. 3	258	545 Potlatch	12.5	2.27
107	Milton, City Of	158	674 Surprise Lake	12.5	8.46
108	Minidoka, City Of	161	451 Minidoka	2.4	0.10
109	Mission Valley Power	483	215 Elmo	12.5	2.06
110	Missoula Electric	364	137 Clinton	12.5	1.38
111			259 Frenchtown	12.5	6.27
112			337 Huson	13.8	3.12
113			683 Tarkio	12.5	0.58
114					11.36
115	Monmouth, City Of	163	459 Monmouth	12.5	10.92
116	Nespelem Valley Electric	367	400 Lone Pine	12.5	1.24
117	Northern Lights	370	79 Bonner's Ferry	13.8	2.42
118			377 Laclede	13.8	4.07
119			888 Moyie	13.8	0.93
120			891 North Bench	13.8	1.11
121			612 Samuels	13.8	2.52
122			614 Sandpoint	13.8	3.66
123			627 Selle	13.8	4.50
124			716 Troy	13.8	3.37
125			784 Yaak	12.5	0.49
126					23.06
127	Northern Wasco PUD	262	696 The Dalles	12.5	10.35
128	OHOP Mutual	372	736 Lynch Creek	12.5	3.62
129	Peninsula Light Company	374	903 Narrows	12.5	9.83

## Appendix C

### Utility Delivery Billing Determinants

12CP Megawatts

	Customer		Delivery Point		
	Name	No.	Name	kV	MW
130	Ravalli Elec. Coop.	380	156 Corvallis	12.5	5.02
131			286 Grantsdale	12.5	1.81
132			666 Stevensville	12.5	3.99
133			740 Victor	12.5	3.25
134					14.08
135	Skamania County PUD	279	106 Cape Horn	12.5	3.29
136			113 Carson	12.5	7.33
137			80 North Bonneville	12.5	1.88
138			870 Stevenson	12.5	4.30
139			727 Underwood	12.5	2.68
140					19.49
141	Steilacoom, Town Of	185	663 Steilacoom	12.5	5.79
142	Surprise Valley	386	169 Davis Creek	12.5	0.49
143	Tillamook PUD	288	48 Beaver	12.5	2.36
144			265 Garibaldi	24.9	7.29
145			320 Hebo	20.8	0.84
146			457 Mohler	24.9	8.11
147			701 Tillamook 12.5	12.5	15.91
148			703 Tillamook 24.9	24.9	19.54
149					54.03
150	Troy, City Of	189	919 Troy	13.8	1.93
151	Wahkiakum County PUD	293	116 Cathlamet	12.5	5.67
152			676 Grays River	12.5	1.04
153					6.71
154	Wasco Electric	394	534 Pine Hollow	12.5	0.67
155			693 The Dalles	12.5	2.26
156			723 Tygh Valley	12.5	4.37
157					7.31
158	West Oregon Electric	397	478 Necanicum	12.5	0.49
159	Delivery Billing Determinant				645

## APPENDIX D

### **TBL Load Forecasting Methodology and Scope**



## **Appendix D**

### **TBL Load Forecasting Methodology and Scope**

#### **Load Analysis Methodology for Non-Generating Utilities**

TBL's Load Forecasting Group prepared load projections for the 120 customers identified in Table D1. Also shown in Table D1 are those entities excluded from this analysis, which are the Investor Owned Utilities (IOUs), Public Generating Utilities, and Direct Service Industries.

Load forecasts are determined by first extracting monthly metered raw load data from the Billing Information System (BIS) for the period January 1994 through December 1998. Annual growth rates for the utility's system requirements are then calculated for the period 1994 through 1998. This system-specific historical compound average annual growth rate (AARG) is then used to "grow" the system requirements (MWh) for the period (1999 – 2003). This assumes that near term future growth will not significantly depart from recent historical growth.

The historical data provides the basis for reviewing the varied loading patterns within a utility's distribution network. This gives the means by which the Point of Delivery (POD) shares of a utility's system requirements and monthly load shapes are determined. The derived values are then used to allocate projected monthly (MWh) loads by POD. It is assumed that monthly POD load profiles for a customer's system will emulate recent history.

Load factors (both historical POD and month specific) were used to estimate the non-coincident demands in the forecast period. Load factor is defined as the monthly energy divided by (the maximum peak load \* hours). Historical diversity factors are calculated for both coincident and "Total Transmission System Load" (TTS defense) demands. For purposes here, "TTS defense" demand is the demand at a POD at the time of the peak TTS defense. Coincident demand is the POD's contribution to the customer's peak demand. The formulas used are:

- 1) Coincident MW divided by Non-Coincident MW = Coincident diversity factor
- 2) TTS defense MW divided by Non-Coincident MW = TTS diversity factor

These diversity factors are then applied to the estimated non-coincident demand to obtain projected coincident and TTS defense demands.

**Appendix D, Table 1**  
**Scope of Forecast: Included and Excluded Utilities**

	Name	No.
<b>Customers included in forecast</b>		
1	Albany Research Center *Bureau of Mines)	410
2	Albion, City of	102
3	Alder Mutual Light Company	301
4	Ashland, City of	103
5	Asotin PUD	201
6	Bandon, City of	104
7	Benton PUD	203
8	Benton REA	303
9	Big Bend Electric Coop.	306
10	Blachly-Lane County Coop. Electric	309
11	Blaine, City of	106
12	Bonners Ferry Electric, City of	107
13	Burley, City of	109
14	Canby Utility Board	111
15	Cascade Locks, City of	115
16	Central Electric Coop.	312
17	Central Lincoln PUD	207
18	Centralia, City of	119
19	Cheney, City of	123
20	Chewelah, City of	124
21	Clallam County PUD No. 1	213
22	Clatskanie PUD	219
23	Clearwater Power Company	315
24	Columbia Power Coop.	321
25	Columbia REA	324
26	Columbia River PUD	221
27	Columiba Basin Electric Coop.	318
28	Consolidated Irr. Dist #19	192
29	Consumers Power Inc.	327
30	Coos-Curry Electric Coop.	330
31	Coulee Dam Light Dept. City of	125
32	Declo, City of	127
33	Douglas Electric Coop. Inc.	333
34	Drain, City of	128
35	East End Mutual Electric	335
36	Eatonville, Town of	131
37	Ellensburg, City of	133
38	Elmhurst Mutual Power & Light Co.	334
39	Emerald PUD	229
40	Fairchild Air Base	430
41	Fall River Electric Coop.	337
42	Farmers Electric Co.	338
43	Ferry County PUD No. 1	230
44	Fircrest, City of	140
45	Flathead Electric Coop. Inc.	339
46	Forest Grove, City of	142
47	Franklin County PUD	233

**Appendix D, Table 1**  
**Scope of Forecast: Included and Excluded Utilities**

	Name	No.
48	Glacier Electric Coop. Inc.	340
49	Harney Electric Coop.	341
50	Heyburn, City of	150
51	Hood River Electric Coop.	342
52	Idaho County Light and Power Coop.	345
53	Idaho Falls, City of	152
54	Inland Power & Light Company	348
55	Kittitas County PUD No. 1	246
56	Klickitat County PUD	250
57	Kootenai Electric Coop.	351
58	Lakeview Light & Power Company	353
59	Lane Electric Coop. Inc.	354
60	Lewis County PUD No. 1	253
61	Lincoln Electric Coop. (Mont.)	357
62	Lost River Electric Coop.	359
63	Lower Valley Power and Light	360
64	Mason County PUD No. 1	257
65	Mason County PUD No. 3	258
66	McCleary, City of	154
67	McMinnville, City of	155
68	Midstate Electric Coop.	361
69	Milton, City of	158
70	Milton-Freewater, City of	159
71	Minidoka, City of	161
72	Mission Valley Power	483
73	Missoula Electric Coop. Inc.	364
74	Modern Electric Water Company	366
75	Monmouth, City of	163
76	Nespelem Valley Coop.	367
77	Northern Lights Inc.	370
78	Northern Wasco County PUD	262
79	OHOP Mutual Light Company	372
80	Okanogan County Electric Coop.	373
81	Orcas Power & Light Company	376
82	Oregon Trail Consumers Coop.	371
83	Pacific County PUD No. 2	270
84	Parkland Light & Water Company	375
85	Peninsula Light Company Inc.	374
86	Plummer, City of	167
87	Port Angeles, City of	170
88	Raft River Elec. Coop.	379
89	Ravalli County Electric Coop.	380
90	Richland, City of	175
91	Riverside Electric Co.	381
92	Rupert, City of	177
93	Salem Electric	383
94	Salmon River Coop.	384
95	Skamania County PUD	279
96	Soda Spring, City of	181

**Appendix D, Table 1**  
**Scope of Forecast: Included and Excluded Utilities**

	Name	No.
97	South Side Elec. Lines	385
98	Springfield Utility Board	184
99	Steilacoom, Town of	185
100	Sumas, City of	186
101	Surprise Valley Elec.	386
102	Tanner Electric Coop.	387
103	Tillamook PUD	288
104	Troy, City of	189
105	Umatilla Electric Coop.	388
106	United Electric Cooperative	311
107	US DOE Richland	405
108	US Navy - Bangor	490
109	US Navy - Jim Creek	491
110	US Navy - Puget Sound Naval Ship.	451
111	Vera Water and Power	191
112	Vigilante Electric Coop.	390
113	Wahkiakum County PUD	293
114	Wapato	482
115	Wasco Electric Coop.	394
116	Wells Rural Electric	396
117	West Oregon Electric Coop.	397
118	Whatcom County PUD No. 1	298
119	WPPSS (Energy Northwest)	195
120	Yakima Project (Roza)	472

**Appendix D, Table 1**  
**Scope of Forecast: Included and Excluded Utilities**

	Name	No.
<b>Customers Excluded from Forecast</b>		
121	ACPC, Inc.	701
122	Alcoa	605
123	Chelan County PUD No. 1	210
124	Clark Public Utilities	216
125	Columbia Falls Aluminum	615
126	Cowlitz County PUD	222
127	Douglas County PUD No. 1	226
128	Elf Atochem	702
129	Eugene Water and Electric Board	137
130	Georgia Pacific West Inc.	722
131	Glenbrook Nickel Joint Venture	725
132	Goldendale Aluminum (Col. Alum.)	614
133	Grant County PUD No. 2	238
134	Grays Harbor County PUD	241
135	Idaho Power Company	530
136	Intalco	640
137	Kaiser Aluminum	651
138	NW Aluminum Co.	635
139	Okanogan County PUD No. 1	266
140	Oregon Metallurgical	743
141	Oregon Steel Mill (Gilmore Steel)	785
142	Pacific Power and Light	560
143	Pend Oreille County PUD No. 1	273
144	Port Townsend Paper	716
145	Portland General Electric	575
146	Puget Sound Energy	580
147	Reynolds Metals Company	675
148	Seattle City Light	108
149	Snohomish County PUD No. 1	283
150	Tacoma Public Utilities	188
151	Vanalco	695
152	Washington Water Power	590





**Appendix D, Table 3**  
Some Determinants of Short-term PSW Sales \*/

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
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----- Model Statistics -----/			----- Coefficients -----/					
Regression Statistics	Forecast Statistics		Variable	Coefficient	StdErr	T-Stat	P-Value	
Iterations	1.0	Forecast Observations	0.0	Constant term	803.353	555.386	1.446	14.89%
Adjusted Observations	365.0	Mean Abs. Dev. (MAD)	0.0	CAPACITY	0.111	0.034	3.301	0.11%
Deg. of Freedom for Error	352.0	Mean Abs. % Err. (MAPE)	0.00%	PRICESCMMC	58.412	15.623	3.739	0.02%
R-Squared	0.5	Avg. Forecast Error	0.0	TEMPSPSW	15.496	3.117	4.972	0.00%
Adjusted R-Squared	0.4	Mean % Error	0.00%	LTCTRCTINT	-0.442	0.222	-1.993	4.70%
Durbin-Watson Statistic	0.5	Root Mean-Square Error	0.0	OCTNOV	-171.870	217.902	-0.789	43.08%
Durbin-H Statistic	#NA	Theil's Inequality Coefficient	0.0	DECJAN	-433.151	203.559	-2.128	3.40%
AIC	12.1	-- Bias Proportion	0.00%	FEBMAR	-650.560	186.569	-3.487	0.06%
BIC	12.3	-- Variance Proportion	0.00%	APRMAY	-710.825	110.246	-6.448	0.00%
F-Statistic	25.7	-- Covariance Proportion	0.00%	JUNJUL	-482.382	81.328	-5.931	0.00%
Prob (F-Statistic)	0.0			TUEWEDTHR	233.290	54.616	4.271	0.00%
Log-Likelihood	-2,714.1			MONFRI	109.525	53.380	2.052	4.09%
Model Sum of Squares	56,044,091			SAT	90.363	77.950	1.159	24.72%
Sum of Squared Errors	64,014,629							
Mean Squared Error	181,860							
Std. Error of Regression	426.5							
Mean Abs. Dev. (MAD)	330.9							
Mean Abs. % Err. (MAPE)	19.62%							
Ljung-Box Statistic	819.2							
Prob (Ljung-Box)	0.0							

\*/ An analysis of PBL, Oct. 1997 through Sep. 1998. Col(E) Long-term contract coefficient used in study table TRS 5.

## **APPENDIX E**

### **Network "Choice" Analysis**



**Appendix E**  
Network "Choice" Analysis 1/

		(A)	(B)	(C)	(D)
<b>Customer</b>	<b>No.</b>	/-----Choice-----/			<b>Agent</b>
		Current	Base	Economic	
1	Albion, City of	102	NT	NT	PBL
2	Alder Mutual Light Co.	301	NT	NT	
3	Ashland, City of	103	NTP	NT	
4	Asotin County PUD #1	201	NT	NT	PBL
5	Bandon, City of	104	NTP	NT	
6	Benton Cnty PUD	203	PTP	PTP	NCD
7	Benton REA	303	NT	NCD	NCD
8	Big Bend Electric Coop.	306	NT	NT	PBL
9	Blachly-Lane County Coop.	309	NT	NT	PNGC
10	Blaine	106	NTP	NT	
11	Bonners Ferry (City)	107	NTP		
12	Burley, City of	109	NT	NT	PBL
13	Canby Utility Board	111	NTP	NT	
14	Cascade Locks, City of	115	NTP	NT	
15	Central Elec Coop, Inc.	312	NT	NT	PNGC
16	Central Lincoln PUD	207	NT	NT	
17	Centralia, City of	119	NT	NT	
18	Chelan County PUD #1	210	NTP	STP	NCD
19	Cheney, City of	123	NT	NT	
20	Chewelah, City of	124	NT	NT	PBL
21	Clallam County PUD #1	213	NT	NT	
22	Clark Public Utilities	216	NT	NT	PPL
23	Clatskanie PUD	219	PTP	PTP	NCD
24	Clearwater Power Co.	315	NT	NT	
25	Columbia Basin Elec Coop	318	NT	NT	PBL
26	Columbia Power Coop	321	NT	NT	PBL
27	Columbia REA	324	NT	NT	PBL
28	Columbia River PUD	221	NT	NT	
29	Consolidated Irrigation Dist	192	NTP		
30	Consumer's Power, Inc.	327	NT	NT	PNGC
31	Coos-Curry Electric Coop.	330	NT	NCD	PNGC
32	Coulee Dam (City of)	125	NT	NT	PBL
33	Cowlitz County PUD	222	NTP	NCD	
34	Declo, City of	127	NT	NT	PBL
35	Douglas County PUD # 1	226	PTP	PTP	NCD
36	Douglas Electric Coop.	333	NT	NT	PNGC
37	Drain, City of	128	NTP	NT	
38	East End Mutual Co.	335	NT	NT	PBL
39	Eatonville, Town of	131	NT	NT	
40	Ellensburg, City of	133	NT	NT	
41	Elmhurst Mutual	334	NT	NT	
42	Emerald PUD	229	NTP	NT	
43	Eugene Water and Electric Board	137	NTP	NCD	
44	Fall River Rural Elec Coop	337	NT	NT	PBL
45	Farmers' Elec Company	338	NT	NT	PBL
46	Ferry County PUD #1	230	NT	NT	PBL
47	Fircrest, City of	140	NT	NT	
48	Flathead Electric Coop., Inc.	339	NTP	NCD	NCD
49	Forest Grove, City of	142	NTP	NT	
50	Franklin Cnty PUD	233	PTP	NCD	NCD
51	Glacier Electric Coop., Inc.	340	NT	NT	
52	Grant County PUD #2	238	NTP	PTP	NCD
53	Grays-Harbor County PUD	241	PTP	PTP	NCD
54	Harney Elec Coop, Inc.	341	NT	NT	PBL
55	Heyburn, City of	150	NT	NT	PBL
56	Hood River Elec Coop	342	NT	NT	PBL

**Appendix E**  
Network "Choice" Analysis 1/

		(A)	(B)	(C)	(D)	
		/----- Customer	Choice Current	Base	Economic	Agent
57	Idaho County Light & Power	345	NT	NT	NT	
58	Idaho Falls, City of	152	PTP	NCD	NCD	
59	Inland Power & Light Co.	348	NT	NT	NT	
60	Kittitas County PUD #1	246	NTP	NT	NT	
61	Klickitat Cnty	250	PTP	PTP	NT	
62	Kootenai Electric Coop., Inc.	351	NT	NT	NT	
63	Lakeview Light & Power Co.	353	NT	NT	NT	
64	Lane Electric Coop., Inc.	354	NT	NT	NT	PNGC
65	Lewis County PUD #1	253	NT	NT	NT	
66	Lincoln Electric Coop. - MT	357	NT	NT	NT	
67	Lincoln Electric Coop.-WA	358	NT			
68	Lost River Elec Coop, Inc.	359	NT	NT	NCD	PNGC
69	Lower Valley Power & Light	360	NT	NT	NT	
70	Mason County PUD #1	257	NT	NT	NT	
71	Mason County PUD #3	258	NT	NCD	NCD	
72	McCleary, City of	154	NT	NT	NT	
73	McMinnville, City of	155	NT	NT	NT	
74	Midstate Elec Coop, Inc.	361	NT	NT	NT	PBL
75	Milton, City of	158	NT	NT	NT	
76	Milton-Freewater, City of	159	NT	NT	NT	
77	Minidoka, City of	161	NT	NT	NT	PBL
78	Missoula Electric Coop.	364	NT	NT	NT	
79	Modern Electric Co.	366	NT	NT	NT	PBL
80	Monmouth, City of	163	NTP	NT	NT	
81	Nespelem Valley Elec. Coop.	367	NT	NT	NT	PBL
82	Northern Lights, Inc.	370	NT	NT	NCD	PNGC
83	Northern Wasco County PUD	262	NT	NT	NT	
84	Ohop Mutual Light Co.	372	NT	NT	NT	
85	Okanogan County Elec. Coop.	373	NTP	NT	NT	PBL
86	Okanogan County PUD	266	NTP	NT	NT	
87	Orcas Power & Light Co.	376	NT	NT	NT	
88	Oregon Trail Elec Coop	371	NT	NT	NCD	PNGC
89	Pacific County PUD #1	270	NT	NT	NT	
90	Parkland Light & Water Co.	375	NT	NT	NT	
91	Pend Oreille PUD #1	273	NTP	NT	NT	
92	Peninsula Light Co., Inc.	374	NT	NT	NT	
93	Plummer, City of	167	NT	NT	NT	PBL
94	Port Angeles City Light	170	NT	NT	NT	
95	Raft River Rural Elec Coop.	379	NT	NT	NCD	PNGC
96	Ravalli County Electric Coop.	380	NTP	NT	NT	
97	Richland, City of	175	PTP	PTP	NCD	
98	Riverside Elec Company, Ltd.	381	NT	NT	NT	PBL
99	Rupert, City of	177	NT	NT	NT	PBL
100	Rural Elec Company	382	NT			PBL
101	Salem Electric	383	NT	NT	NT	PBL
102	Salmon River Elec	384	NTP	NT	NT	
103	Seattle City Light	180	PTP	NCD	NCD	
104	Skamania County PUD	279	NT	NT	NT	PBL
105	Snohomish County PUD	283	PTP	NCD	NCD	
106	Soda Springs, City of	181	NT	NT	NT	PBL
107	South Side Elec Lines, Inc.	385	NT	NT	NT	PBL
108	Springfield Utility Board	184	PTP	PTP	NCD	
109	Steilacoom, Town of	185	NT	NT	NT	
110	Sumas, City of	186	NTP	NT	NT	
111	Surprise Valley Elec. Corp.	386	NT	NT	NT	PBL
112	Tacoma Public Utilities	188	NTP	NCD	NT	

**Appendix E**  
Network "Choice" Analysis 1/

		(A)	(B)	(C)	(D)	
		/-----Choice-----/				
		No.	Current	Base	Economic	Agent
113	Tanner Electric Coop.	387	NTP	NT	NT	
114	Tillamook People's Util. Dist.	288	NT	NT	NT	
115	Troy, City of	189	NTP	NT	NT	
116	Umatilla Elec Coop	388	NT	NT	NCD	PNGC
117	Unity Light & Power	389	NT			PBL
118	Vera Water & Power	191	NT	NT	NT	
119	Vigilante Electric Coop.	390	NT	NT	NT	
120	Wahkiakum County PUD	293	NT	NT	NT	
121	Wasco Elec Coop	394	NT	NT	NT	PBL
122	Wells Rural Elec Company	396	NT	NT	NCD	
123	West Oregon Electric Coop.	397	NTP	NT	NT	
124	Whatcom County PUD #1	298	NT	NT	NT	
125	USBIA-Wapato	498	NT	NT		
126	USBIA- Mission Valley	499	NT	NT		
127	U.S. DEPARTMENT OF NAVY (BANGOR)	490	NTP	NT	NT	
128	US BUREAU OF MINES	410	NTP	NT	NT	
129	WASHINGTON PUBLIC POWER SUPPLY SYST	195	NTP	NT	NT	
130	U.S. AIR FORCE (FAIRCHILD)	430	NT	NT	NCD	PBL
131	US DEPT OF ENERGY (RICHLAND)	404	NTP	NTP		
132	U.S.B.I.A.- Wapato	482	NT	NT	NT	PBL
133	UNITED ELECTRIC COOP	311	NT	NT	NT	PBL
134	ENERYG NW INC., (FEC)	336	NT	NT		
135	US DEPT OF ENERGY (300 AREA)	405	NTP	NT	NT	
136	U.S. DEPARTMENT OF NAVY (PUGET SOUN	451	NTP	NT	NT	
137	USBIA-MISSION VALLEY POWER	483	NT	NT	NT	
138	USBR, YAKIMA PROJECT (ROZA)	472	NT	NT	NT	
139	U.S. DEPARTMENT OF NAVY (JIM CREEK)	491	NTP	NT	NT	
140	NATIONAL ENERGY SYSTEMS COMPANY	817	PTP			
141	VANALCO	695	PTP	PTP		
142	PORT TOWNSEND PAPER CORPORATION	716	NTP	NT	NCD	

1/ Column (A), Current Choice, is the Customer's current service.

Column (B), Base Choice, is the service assumed for the FY 2002/03 rate period.

Column (C), Economic Choice, is the result of the economic analysis.



## APPENDIX F

# **Development of FPT-02 Compensation Factors**





## Appendix F

### Development of FPT-02 Compensation Factors

Company	Resource	POD Name	Contr No.	Demand (MW)			Main Grid					Secondary System					Compensation Factors		
				POD	Project	Wght	Term1	Miles	Misc	Term2	Interc Term	Txf	Interc Term	Interm Term 1	Miles	Interm Term 2	Priest Rapids	\$/kW-mo	\$/kW-yr
Pend Oreille Co PUD	Boundary POI	Usk	92488	32.0	32.0	1.000	1.0	49.0	1.0	0.5	0.5						7.584	0.632	7.584
	Box Canyon	Newport	90006	0.0	0.0	0.000							1.0	2.1			0.000		
		Sacheen	90006	0.0	0.0	0.000		7.8					1.0	13.9	1.00		0.000		
		Metaline Falls	90006	0.0	0.0	0.000											0.000		
		Diamond Lake	90006	0.0	0.0	0.000							8.3	1.00			0.000		
		Usk	90006	0.0	0.0	0.000	1.0		1.0	1.0	1.0		1.0	13.9	1.00		0.000	0.000	0.000
Portland General Electric	Boardman Unit 1	John Day	92260	75.0	75.0	1.000	1.0	28.3	1.0	1.0	1.0						6.873	0.573	6.873
	WNP-3	Keeler	92187	53.7	53.7	1.000	1.0	101.6	1.0	1.0	2.0						12.148	1.012	12.148
Power Resources Coop (PNGC)	Boardman	John Day	94151	50.0	50.0	1.000	1.0	28.3	1.0	1.0							6.293		
		Slatt	94151	0.0	50.0	0.000											0.000	0.524	6.293
Puget Sound Power and Light	WNP-3	Maple Valley	92185	32.2	32.2	1.000	1.0	69.4	1.0	1.0	2.0						10.085	0.840	10.085
Tacoma Public Utilities	Priest Rapids	Cowlitz	13512	71.1	71.1	1.000	1.0	128.5	1.0							-0.2370	11.824	0.985	11.824
	Centralia	Cowlitz	94304	107.0	107.0	1.000			38.1	1.0	1.0						6.270	0.523	6.270
	NFP	John Day	93936	49.3	49.3	1.000	1.0	130.0	1.0								12.157	1.013	12.157
Total FPT.1				2774													13.069		
Total FPT.3					733												8.909		
Total FPT						3507											12.199		

## **APPENDIX G**

### **DSI UFT Delivery Charge Application**



## Appendix G

### DSI UFT Delivery Charge Application

		(A) Average ACR	(B) Investment 1/	(C) UFT I&A	(D) O&M	(E) Total 2/	(F)
			(\$)	(\$)	(\$)	(\$)	
1	FY2002	8.09%	61,490,690	4,976,071	1,180,996	6,157,067	
2	FY2003	8.09%	62,720,504	5,075,593	1,241,101	6,316,694	
3	Average		62,105,597	5,025,832	1,211,049	6,236,881	

Summary of UFT Sole Use Charges (from Contracts in place as of 2/1/2000)					Projected O&M 4/	
DSI Facility 3/	Investment	I&A	O&M	Total	2,002.0	2,003.0
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
4 ALCOA (Addy)	2,894,264	233,857	44,750	278,607	48,945	51,331
5 ALCOA (Intalco)	5,970,595	485,409	139,968	625,377	153,090	160,552
6 ALCOA (Valhalla)	3,622,454	294,506	91,900	386,406	100,516	105,415
7 Atochem (Penwalt)	2,471,406	199,059	252,075	451,135	252,075	266,903
8 Goldendale Aluminum (Harvalum)	4,244,203	345,054	95,460	440,514	104,409	109,498
9 NW Aluminum (Harvey)	1,790,953	145,604	45,188	190,792	49,424	51,833
10 Reynolds (Longview)	22,196,629	1,793,488	238,174	2,031,662	260,503	273,200
11 Reynolds (Troutdale)	14,753,547	1,192,087	193,860	1,385,947	212,034	222,369
12 <b>TOTAL</b>	<b>57,944,051</b>	<b>4,689,063</b>	<b>1,101,375</b>	<b>5,790,438</b>	<b>1,180,996</b>	<b>1,241,101</b>
13 Average ACR		8.09%				

-----  
1/ Total investment at 2% annual growth.

2/ Assumes customers with agreements terminating in 2001 will have follow-on agreements

3/ Excludes facilities projected to be sold

4/ O&M projections based upon the projected 3 year average levels as applied to the year the UFT components were last updated



## APPENDIX H

### **Calculation of GTA Replacement Costs**



## Appendix H

### Calculation of GTA Replacement Costs

#### DETAILED SUMMARY - FY2002

	Transferor	Customer	(A)	(B)	(C)	(D)	(E)
			Load at GTA PODs (MW)	Cust Total Load (MW)	GTA/TOT A/B	Total Nonfed Power (MW)	Nonfed power over GTA PODs C*D
1	Benton Co PUD	Benton REA	21.21	142.99	0.15	44.00	6.53
2	Benton Co PUD	Klickitat PUD	7.44	70.30	0.11	-	-
3	EWEB	Emerald	10.35	109.18	0.09	-	-
4	EWEB	SUB	6.65	208.14	0.03	100.00	3.19
5	Franklin Co PUD	Big Bend Elec	8.82	130.66	0.07	-	-
6	Grant Co PUD	Big Bend Elec	10.04	130.66	0.08	-	-
7	Grant Co PUD	Kittitas PUD # 1	2.32	16.32	0.14	-	-
8	Grays Harbor	McCleary, City of	8.50	8.50	1.00	-	-
9	Idaho Power	Albion	0.89	0.89	1.00	-	-
10	Idaho Power	Burley	25.90	25.90	1.00	-	-
11	Idaho Power	East End	5.31	5.31	1.00	-	-
12	Idaho Power	Farmers	1.18	1.18	1.00	-	-
13	Idaho Power	Harney	19.99	38.19	0.52	-	-
14	Idaho Power	Heyburn, City of	17.86	17.86	1.00	-	-
15	Idaho Power	Minidoka	0.19	0.19	1.00	-	-
16	Idaho Power	OTEC	132.97	132.97	1.00	40.40	40.40
17	Idaho Power	Raft River REC	13.87	63.86	0.22	-	-
18	Idaho Power	Riverside	3.80	3.80	1.00	-	-
19	Idaho Power	Rupert	40.76	40.76	1.00	-	-
20	Idaho Power	Southside	15.26	15.26	1.00	-	-
21	Idaho Power	United	35.17	44.62	0.79	-	-
22	Idaho Power	Wells	87.32	110.69	0.79	-	-
23	Montana Power	Glacier Elec.	33.65	33.65	1.00	0.00	0.00
24	Montana Power	Missoula Elec	37.15	37.15	1.00	0.00	0.00
25	Montana Power	Northern Lights	1.50	53.51	0.03	7.50	0.21
26	Montana Power	Ravalli	30.87	30.87	1.00	0.00	0.00
27	Montana Power	Vigilante	38.72	45.22	0.86	0.00	0.00
28	N Wasco	Wasco Elec.	2.66	21.52	0.12	-	-
29	Okanogan Co PUD	Nespelem	2.34	13.34	0.18	-	-
30	Okanogan Co PUD	Okanogan Coop	12.59	12.59	1.00	-	-
31	Pacificorp	Ashland, City of	37.35	37.35	1.00	-	-
32	Pacificorp	Benton REA	5.39	142.99	0.04	44.00	1.66
33	Pacificorp	Central Elec Coop	43.19	137.75	0.31	27.50	8.62
34	Pacificorp	Columbia Pwr	1.97	6.96	0.28	-	-
35	Pacificorp	Columbia REA	4.12	123.28	0.03	-	-
36	Pacificorp	Cowlitz	4.34	242.53	0.02	196.78	3.52
37	Pacificorp	Douglas Elec Coop	17.21	41.19	0.42	8.00	3.34
38	Pacificorp	Emerald	20.00	109.18	0.18	-	-
39	Pacificorp	Fall River	72.26	72.26	1.00	-	-
40	Pacificorp	Hood River	12.07	23.07	0.52	-	-
41	Pacificorp	Idaho Falls, City of	140.39	140.39	1.00	48.00	48.00
42	Pacificorp	Klickitat PUD	15.90	70.30	0.23	-	-
43	Pacificorp	Lane Electric	4.57	72.20	0.06	10.60	0.67
44	Pacificorp	Lost RiverECoop	20.45	20.45	1.00	13.00	13.00
45	Pacificorp	Lower ValleyP&L	146.71	146.71	1.00	-	-
46	Pacificorp	O Metallurgical	23.11	23.11	1.00	-	-
47	Pacificorp	Salmon RiverECoop	60.39	60.39	1.00	-	-
48	Pacificorp	Soda Springs, City of	4.45	4.45	1.00	-	-
49	Pacificorp	Surprise Valley	27.75	38.79	0.72	-	-

## Appendix H

### Calculation of GTA Replacement Costs

Transferor	Customer	(A)	(B)	(C)	(D)	(E)
		Load at GTA PODs (MW)	Cust Total Load (MW)	GTA/TOT A/B	Total Nonfed Power (MW)	Nonfed power over GTA PODs C*D
50 Pacificorp	Tillamook	26.84	115.71	0.23	2.20	0.51
51 Pacificorp	Umatilla Electric	54.88	146.75	0.37	34.00	12.72
52 Pacificorp	Wasco Elec.	3.89	21.52	0.18	-	-
53 Pacificorp	West OR	4.28	25.54	0.17	-	-
54 PGE	Columbia River	22.75	61.73	0.37	-	-
55 PGE	West OR	3.27	25.54	0.13	-	-
56 PSP&L	Blaine, City of	11.26	11.26	1.00	-	-
57 PSP&L	Georgia Pacific	32.00	32.00	1.00	-	-
58 PSP&L	Kittitas PUD # 1	3.07	16.32	0.19	-	-
59 PSP&L	Orcas	54.24	54.24	1.00	-	-
60 PSP&L	Sumas, City of	3.00	3.00	1.00	-	-
61 PSP&L	Tanner	18.49	18.49	1.00	-	-
62 Sierra Pacific	Harney	19.99	38.19	0.52	-	-
63 Sierra Pacific	Wells	79.40	110.69	0.72	-	-
64 South Side Elect.	Declo, City of	0.76	0.76	1.00	-	-
65 Tacoma	Alder Mutual	0.98	0.98	1.00	-	-
66 Tacoma	Eatonville, Town of	6.76	6.76	1.00	-	-
67 Tacoma	Elmhurst	70.64	70.64	1.00	-	-
68 Tacoma	Fircrest, City of	10.30	10.30	1.00	-	-
69 Tacoma	Lakeview	60.14	60.14	1.00	-	-
70 Tacoma	Lewis PUD	3.95	218.35	0.02	-	-
71 Tacoma	Milton, City of	12.70	12.70	1.00	-	-
72 Tacoma	Ohop	6.33	6.33	1.00	-	-
73 Tacoma	Parkland	27.51	27.51	1.00	-	-
74 Tacoma	Peninsula	138.14	138.14	1.00	13.00	13.00
75 Tacoma	Steilacoom, Town of	11.45	11.45	1.00	-	-
76 US DOE	Benton Co PUD	0.33	547.31	0.00	20.00	0.01
77 US DOE	DOE-Richland	29.28	29.28	1.00	-	-
78 Utah P&L	Fall River	72.26	72.26	1.00	-	-
79 Utah P&L	Idaho Falls, City of	140.39	140.39	1.00	48.00	48.00
80 Utah P&L	Lost RiverECoop	20.45	20.45	1.00	13.00	13.00
81 Utah P&L	Lower ValleyP&L				-	-
82 Utah P&L	Salmon RiverECoop	60.39	60.39	1.00	-	-
83 Utah P&L	Soda Springs, City of	4.45	4.45	1.00	-	-
84 WWP	Big Bend Elec	40.68	130.66	0.31	-	-
85 WWP	Cheney, City of	28.42	28.42	1.00	0.00	0.00
86 WWP	Chewelah, City of	5.31	5.31	1.00	-	-
87 WWP	Clearwater	36.26	47.35	0.77	0.11	0.09
88 WWP	Fairchild AF Base	12.53	12.53	1.00	-	-
89 WWP	Idaho Co. L&P	10.88	11.59	0.94	1.00	0.94
90 WWP	Inland P&L	110.09	202.75	0.54	-	-
91 WWP	Kootenai Elec Co	69.85	69.85	1.00	0.00	0.00
92 WWP	Modern Elec	63.40	63.40	1.00	0.00	0.00
93 WWP	Northern Lights	2.88	53.51	0.05	7.50	0.40
94 WWP	Plummer, City of	5.70	5.70	1.00	-	-

## Appendix H

### Calculation of GTA Replacement Costs

#### SUMMARY BY TRANSFER AGREEMENT - FY2002

Transferor	(A)	(B)	(C)	(D)	(E)
	Load at GTA PODs (MW)	Cust Total Loads (MW)	Nonfed power over GTA PODs (MW)	Tariff Rate (\$/kwyrr)	GTA Repl. Cost (\$/yr)
95 Benton Co PUD	28.6	213.3	6.5	0.58	\$3,798
96 EWEB	17.0	317.3	3.2	6.18	\$19,734
97 Franklin Co PUD	8.8	130.7			
98 Grant Co PUD	12.4	147.0			
99 Grays Harbor	8.5	8.5			
100 Idaho Power	400.5	501.5	40.4	11.67	\$471,468
101 Montana Power	141.9	200.4	0.2	43.32	\$9,108
102 N Wasco	2.7	21.5			
103 Okanogan Co PUD	14.9	25.9			
104 Pacificorp	751.5	1822.9	92.0	24.30	\$2,236,641
105 PGE	26.0	87.3			
106 PSP&L	122.1	135.3			
107 Sierra Pacific	99.4	148.9			
108 South Side Elect.	0.8	0.8			
109 Tacoma	348.9	563.3	13.0	9.06	\$117,780
110 US DOE	29.6	576.6	0.0	0.96	\$12
111 Utah P&L	297.9	297.9	61.0	24.30	\$1,482,267
112 WWP	386.0	631.1	1.4	16.79	\$24,005
113	<b>TOTALS</b>	<b>2,697</b>	<b>5,830</b>	<b>218</b>	<b>\$4,364,812</b>



## APPENDIX I

### **Southern Intertie Seasonality Analysis**



## Appendix I

### Southern Intertie Seasonality Analysis

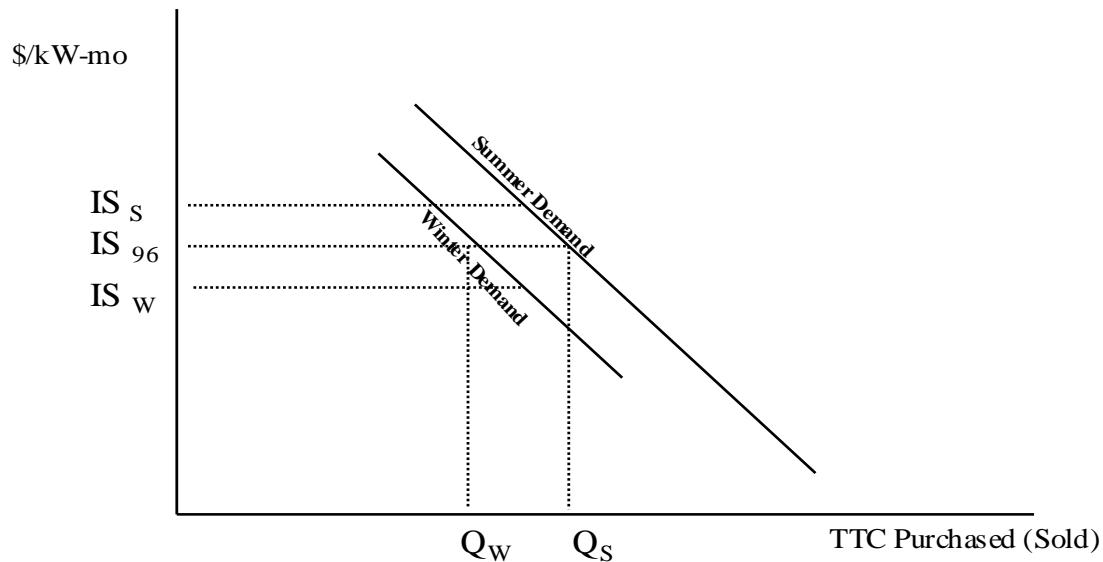
#### 1. Evidence of different demand for Southern Intertie services in Summer vs. Winter.

Table 1 shows the average percentage of Total Transmission Capacity (TTC) sold in each month from May, 1997 through October, 1999. Over the two year period 88% of TTC was sold on average. The average for all summer months was 97% while the average for the winter months was 78%. When looking at two years of data so that the number of months in each season are equal, the average percentage of TTC sold in summer is 101% and 75% in winter.

#### 2. Methodology for Seasonal Differentiation

The observation that demand for service on the Southern Intertie is higher in summer than in winter is depicted in the chart below. With a single price, the quantity demanded in winter is less than in summer. With the seasonal differentiation, the price in winter is 75% of the rate in summer. (The chart is not drawn to scale.)

Illustrative Seasonal Demand For Southern Intertie



**Appendix I, Table 1**  
**Total Transmission Capacity Sold by Month**

Month	Ave Percent TTC Sold
May-97	78%
Jun-97	86%
Jul-97	98%
Aug-97	101%
Sep-97	
Oct-97	95%
Nov-97	69%
Dec-97	67%
Jan-98	68%
Feb-98	71%
Mar-98	83%
Apr-98	79%
May-98	109%
Jun-98	95%
Jul-98	97%
Aug-98	108%
Sep-98	114%
Oct-98	112%
Nov-98	71%
Dec-98	53%
Jan-99	56%
Feb-99	70%
Mar-99	90%
Apr-99	93%
May-99	104%
Jun-99	107%
Jul-99	101%
Aug-99	101%
Sep-99	99%
Oct-99	114%
<b>Average</b>	<b>89%</b>

%TTC sold	Season
88%	Average Oct-98 to Sept-99
75%	Average Oct-98 to Mar-99
101%	Average April-99 to Sept-99
88%	Average Oct-97 to Sept-99
75%	Average Winters 97,98
101%	Average Summers 98,99
98%	Average of All Summer Months
78%	Average of All Winter Months

## **APPENDIX J**

### **Monthly Transmission Revenue**







## **APPENDIX K**

### **Power Factor Penalty Charge**



## Appendix K

### Power Factor Penalty Charge

#### **Rate Calculation**

		Capacitors (lagging reactive)	Reactors (leading reactive)
<b>1</b>	<b>Installed Reactive and Associated Capital Investment</b>		
1	Total Installed kVAr	13,975,150	6,441,000
2	Capital Investment	\$240,832,704	\$107,692,655
<b>Annual Costs</b>			
3	Annual Cost Ratio	7.85%	7.85%
4	Annual Cost of Interest And Amortization	\$18,905,367	\$8,453,873
5	Annual Cost of O&M	<u>\$4,154,498</u>	<u>\$1,231,520</u>
6	Total Annual Cost	\$23,059,865	\$9,685,393
<b>7</b>	<b>Calculation of Rate</b>		
8	Annual Cost per kVAr	\$1.65	\$1.50
9	Monthly Cost per kVAr	\$0.14	\$0.12
10	Power Factor Penalty Rate (\$/kVAr-mo) 1/	<b>\$0.28</b>	<b>\$0.24</b>

#### **Revenue Forecast**

	Rate	Current 2/	Proposed 3/
11	Lagging Reactive Demand during HLHs: (\$/kVAr/month)	0.08	0.28
12	Leading Reactive Demand during LLHs: (\$/kVAr/month)	0.06	0.24
13	Reactive Energy (mills/kVArh)	0.53	N/A
<b>Revenues</b>			
14	Demand Charge - Lagging	\$1,045	\$4,000
15	Demand Charge - Leading	\$288	\$1,000
16	Energy Charge	\$133	\$0
17	Total	<b>\$1,466</b>	<b>\$5,000</b>

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1/ The proposed rate is the monthly cost per kVAr doubled to reflect the penalty nature of the charge.

2/ Current revenues are for FY99.

3/ Based on an analysis of several customers, estimate that revenue will increase approximately 25% due to the change from a deadband which is based on a 0.95 power factor to one based on a 0.97 power factor.

Assumed also a 15 to 20 percent reduction in revenues as customers reduce their reactive demand due to the proposed penalty charge.