SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Your Northwest renewables utility

February 11, 2014

Submitted via email to: techforum@bpa.gov, comment@bpa.gov

Subject: Snohomish County PUD No. 1 Comments on Segmentation Workshop Kick-off

Snohomish County PUD No. 1 (Snohomish) would like to take this opportunity to comment on the Segmentation Workshop Kick-off meeting that occurred on January 28th. Snohomish appreciated the opportunity to speak and to be represented on the workshop panel. The following comments suggest a roadmap we believe will lead to a successful workshop process, regardless of the outcome BPA ultimately chooses. The comments also provide preliminary thoughts on BPA's Industry Scan and respond to some of the comments and thoughts expressed during the kick-off meeting.

Segmentation Workshops

Snohomish fully supports a robust transmission segmentation process. Not all of BPA's transmission customers use or benefit from every facility BPA provides transmission service over. The goal of segmentation is to provide a process whereby transmission customers would be allocated costs for only the services they were expected to utilize or benefit from, consistent with cost causation. This goal has been reaffirmed in the dozen or so rate cases since segmentation was implemented in 1981 where a segmentation study was produced and found as allowing BPA to meet all of its statutory obligations. Through a non-precedential settlement in 1996, definitions of certain segments were changed and entire segments were replaced or removed. Many years later, we are now reviewing these segments not through the lens of the 1996 settlement, but rather from the perspective of what segmentation was and should be going forward.

Snohomish recommends a full review of the segments that were revised or added through the 1996 settlement. We believe the steps listed below will aid in that review. As an example, we begin with the Integrated Network.

Step 1: What is an integrated facility?
We believe the definition of the Integrated Network segment that was used for 15 years prior to the 1996 settlement provides a good starting place for answering this question (See Attachment). The definition should not include a voltage bright line that is determinative.

Step 2: What methodology should be used to determine which facilities are integrated?
Snohomish hopes that the segmentation workshops will lead BPA to establish a well-supported, technically justified methodology for determining what is and is not to be included in the Integrated Network segment. This methodology should be durable through time and able to be consistently applied across the Federal Columbia River Transmission System. Because there has not been any technical review or studies performed for the current 34.5 kV bright line in the Integrated Network segment definition, we feel it is important to undertake this work and arrive

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at a methodology that correctly identifies and separates assets that perform non-integrated functionality from integrated network facilities.

Step 3: Who should pay for integrated facilities?
Snohomish believes that all transmission customers should share in paying the costs of facilities that are integrated.

Step 4: Should the rates that all or some customers pay be mitigated?
Along with any technical study and cost assignment, rate design must also be considered. To be clear, Snohomish would not advocate a rate design that would place undue burden on any utility, regardless of what costs may be assigned as a result of the proposed technical analysis. Our interpretation of a workable solution is one that first assigns costs according to an appropriate cost causation methodology but then alleviates any "rate shock" through the design of the rate itself and other potential mitigation tools.

After these steps are taken for each segment, if there are facilities that do not fit into any existing segment, then we should tackle how to allocate the costs of these facilities. This may include the establishment of a new segment(s). If this is a case, steps 1 through 4 should be repeated.

BPA's Industry Scan
Snohomish would like to thank BPA for the work put into the Industry Scan. While we have not had a chance to fully analyze the data provided, we offer the following observations on BPA's use of the data from FERC Form 1s.

First, it is our understanding that many of the facilities categorized as transmission or distribution in the Form 1s did not undergo an objective review under the 7-factor test. Many of the classifications may have been made by accounting departments at utilities and have simply never been challenged or have never been proposed to be reclassified since the 7-factor test was established in 1996. We note that FERC does not recognize accounting determinations when determining whether a facility serves a transmission or distribution function:

> AMEA also makes much of its claim that, when Southern builds delivery points for affiliates, it assigns the cost of those facilities to "transmission," an account rolled in to the system-wide transmission charges under Southern's OATT, but when non-affiliated customers such as AMEA seek a similar service those costs are directly assigned. Contrary to AMEA's assertions, accounting does not control ratemaking. Where Southern books its facilities does not dictate how the costs should be treated for ratemaking purposes. For ratemaking purposes, what controls cost allocation is the physical fact of integration.[1]

Second, we note that the voltages of transmission facilities in the West tend to be higher because of the long distances between generation and load. Therefore, comparing average voltages of transmission facilities from data of utilities across the country with BPA's transmission facilities may not be an apples-to-apples comparison.

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[1] *Southern Company Services, Inc.*, 116 FERC ¶ 61,247 at P 23 (2006), *reh'g denied*, 119 FERC ¶ 61,023 (2007).

Finally, we wish to clarify that footnote 100 of Order No. 888, which is referenced in the Scan, was not intended to be an endorsement of a voltage bright line between transmission and distribution. The footnote simply explains that utilities tend to account for "facilities operated at greater than 30 kV as transmission and that distribution facilities are usually less than 40 kV." FERC rejected the use of a voltage bright line when it decided to adopt an analysis of local distribution facilities based on the facilities' functional as well as technical characteristics (i.e., the 7-factor test). FERC stated on the very same page where footnote 100 appears that:

> "While it would be preferable to draw an absolutely "bright" line (e.g., based on technical characteristics such as voltage), the Commission does not believe this is required by the case law and, importantly, would not be a workable approach in all cases because of the variety of circumstances that may arise and because utilities themselves classify facilities differently (e.g., one utility may classify a 69 kV facility as transmission; another may classify it as distribution)."

Conclusion

Snohomish appreciates the opportunity to comment and looks forward to working with BPA and the region throughout the segmentation workshops. If you have any questions regarding our comments, please do not hesitate to contact us.

Sincerely,

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Power, Rates and Transmission Management
Snohomish County PUD No. 1

Attachment

BPA

U.S. Department of Energy
Bonneville Power Administration

DOE/BP-862
July 1987

1987 Final Rate Proposal

Segmentation Study

WP-87-FS-BPA-02

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BPA 1392
Sept. 1980

SEGMENTATION STUDY

I. INTRODUCTION

The purpose of this study is to identify the facilities of the Federal Columbia River Transmission System (FCRTS) according to the types of services they provide and thereby identify the associated capital costs of these services. The results of this study are the segmented FCRTS investment base and the basis for segmenting projected operation and maintenance (O&M) expenses used in BPA's rate proposals.

This document is organized to facilitate the needs of readers interested in different degrees of detail. The text explains the theory and methodology used to segment the FCRTS and displays the results. The supporting data and analyses are documented in the appendices (attached).

This document contains two separate but related analyses. Appendix A segments the transmission facilities of BPA, the Corps of Engineers, and the Bureau of Reclamation. The results of this analysis are used for the segmentation of the transmission revenue requirement in the rate development process. Appendix B further divides the Network segment, developing the revenue requirements used to calculate the Formula Power Transmission rates. Within each appendix, historical plant-in-service is analyzed prior to data for future years (FYs 1987 through 1989).

The present study follows the methodology used in the Segmentation Study of the 1985 rate filing. The definitions and concepts are unchanged; only cost data have been updated.

Chapters I and II of Appendix A list the investment as of September 30, 1985, for each BPA transmission line and substation in each segment. Some substations are divided among more than one segment. These substations are referred to as multisegmented substations. Chapter III of Appendix A delineates the relevant data and computations used to make this

allocation. The historic O&M expenses of the facilities for the last 3 years are shown with their averages in Chapters IV (lines) and V (substations) of Appendix A.

Chapter VI of Appendix A lists the facilities of the Corps of Engineers (Corps) and of the Bureau of Reclamation (Bureau) that are functionalized as transmission, including the proposed additions for the period FYs 1987 through 1989.

Chapter VII of Appendix A segments the proposed additions to BPA facilities for the FY 1987 through 1989 period.

Chapter VIII of Appendix A describes the derivation of the cost factors used in allocating the costs of multisegmented substations.

II. METHODOLOGY AND RESULTS

For ratemaking purposes, BPA allocates the rate period transmission revenue requirement to the various customer classes according to their projected use of the system. To ensure that the allocated costs correspond to the services provided, the facilities of the transmission system are divided among nine categories of service (segments). Because all portions of the system are not needed to provide most types of service, this method of cost allocation is more equitable than one that does not segment facilities. For example, the transmission of non-Federal power (wheeling) does not involve either the low-voltage facilities that deliver Federal power or the facilities that interconnect Federal generating resources to the transmission system. The nine FCRTS segments are defined below.

A. Generation-Integration

The Generation-Integration segment consists of all facilities that connect the Federal generating plants to the integrated BPA transmission network. The segment includes transmission lines and equipment between the

generating plant step-up transformer (functionalized to generation) to the first transmission system substation encountered by the generated power.

Substation terminals that comprise equipment such as disconnect switches, circuit breakers, and lightning arresters are included in the Generation-Integration segment.

The cost of Generation-Integration facilities is not allocated to wheeling except for Columbia Storage Power Exchange (CSPE) power that is generated at Federal resources. Although power that is delivered to transmission customers may, through displacement, flow over these facilities, two reasons preclude their allocation to transmission customers. First, these facilities were constructed to serve power customers and would be needed regardless of transmission service provided; secondly, in many cases transmission customers provide their own facilities to connect their power plants to the BPA transmission system. Consequently, allocating a portion of the costs of Federal Generation-Integration facilities to non-CSPE transmission service could result in those customers paying for both their own and a portion of BPA's Generation-Integration facilities.

B. Integrated Network

The Integrated Network segment consists of the facilities that supply bulk power to the Delivery, Intertie, and Fringe segments. It includes the costs of all facilities serving the transmission function, regardless of voltage. These facilities integrate major system resources directly or in conjunction with either BPA's Generation-Integration facilities or interconnections with other utilities. The Integrated Network provides bulk power transfers between service areas, voltage and frequency regulation, loss savings through displacement, and overall reliability resulting from alternative resource and transmission pathways.

These facilities consist almost entirely of lines and equipment at voltages from 115-kV to 500-kV. (A few 69-kV facilities used primarily for wheeling transactions and reflecting existing contracts are also in this category.)

Integrated Network facilities are allocated to all classes of service because they perform a transmission function for, and provide benefit to, all customer classes.

C. Fringe Area

The Fringe Area segment consists of facilities serving Federal power customers only. This determination is based on the present or near-term planned usage of the facilities. It includes facilities that serve local power purchasers at voltages above 69-kV.

The primary purpose of these facilities is to distribute power from major substations to Federal wholesale customers. Therefore, those facilities used to transmit significant amounts of wheeled power are excluded. Facilities that serve a specific load area where BPA serves all the load are in this category. Some of these lines are parallel to the Integrated Network, but they serve customer substations and carry power primarily for local use without significant through-flow.

The costs of Fringe Area facilities are allocated only to Federal power customers. The loads deemed to be served from the Fringe Area segment, which are used for the development of cost allocation percentages, are identical to the loads that Federal customers place on the Integrated Network segment.

D. Pacific Northwest-Southwest (Southern) Intertie

The Pacific Northwest-Southwest (Southern) Intertie consists of one 1000-kV direct-current line from the Celilo Converter Station at The Dalles and two 500-kV alternating-current lines from John Day to points in Southern

California. BPA owns all the intertie facilities north of the California-Oregon and Nevada-Oregon borders except for one of the a-c lines (from Malin to Grizzly substation in central Oregon), which is owned by Portland General Electric Company. Southern Intertie facilities also include:

1. The 230-kV supply line to Celilo;
2. The Celilo Converter Station and its cooling system;
3. The terminals at John Day and at two other substations (Grizzly and Malin);
4. Four series compensation stations; and
5. Fifty-seven percent of the Buckley-Summer Lake 500-kV line and associated substation facilities (the remaining 43 percent is allocated to Integrated Network).
6. The braking resistor at Chief Joseph, used for Intertie stability control.

The Southern Intertie is used by BPA, the Bureau, and private and public utilities in the Pacific Northwest and Pacific Southwest to realize benefits from regional diversity. These uses include:

1. Sales of surplus power and surplus firm capacity for use in the Southwest;
2. Exchange of power; and
3. Power transfers to benefit scheduled maintenance and emergency outage service.

E. Canadian (Northern) Intertie

The Canadian (Northern) Intertie consists of:

1. Two 500-kV lines between the Custer substation and the United States-Canadian border;
2. One 500-kV line between the Custer and Monroe substations; and

3. Two 230-kV lines from the Boundary Substation to the United States-Canadian border, including the associated substation facilities.

The Northern Intertie provides for better coordination between the systems of the Pacific Northwest and Canada. Its uses include sales and exchanges of power and power transfers during scheduled maintenance and emergency outages.

F. Montana (Eastern) Intertie

The Montana (or Eastern) Intertie segment consists of the Garrison-Townsend 500 kV line and the associated substation facilities at Garrison. These facilities are used to integrate power generated at Colstrip and to transfer power to and from Montana.

Delivery Facilities

The transmission lines and substation facilities required to "step down" (reduce) transmission voltages to delivery voltages (69-kV or lower) at or near points of delivery are subdivided into three segments:

G. Preference Customer Delivery

The Preference Customer Delivery segment consists of the facilities required to supply power at delivery voltages to BPA's preference and Federal agency customers. In addition to substation equipment, these facilities include transmission lines typically at 69-kV to 12-KV.

H. Direct Service Industrial (DSI) Delivery

The Direct Service Industrial Delivery (DSI) segment consists of the delivery voltage facilities required to supply BPA's Direct Service Industrial customers. These facilities consist of substations that reduce transmission voltage to supply voltage, most commonly 13.8-kV.

I. Investor-Owned Utility (IOU) Delivery

The Investor-Owned Utility Delivery (IOU) segment consists of

the facilities required to supply power at delivery voltages for sales to BPA's IOU customers. These facilities consist almost exclusively of substation equipment. The most common delivery voltages (in descending order of usage) are 69-kV, 57-kV, and 34.5-kV.

Exchange Transmission. BPA's transmission costs extend beyond those of the FCRTS. The cost of the Residential Exchange program includes a charge for the use of transmission facilities owned by the exchanging utilities. This transmission component of the Exchange costs is not reflected in the nine segments. Exchange costs functionalized to transmission are allocated only to those customer classes deemed to be served by Exchange generation resources.

In order to identify the facilities and the associated costs that provide a specific type of service, the segmentation process is based on:

A. power flow studies and one-line diagrams that indicate the power flowing through each facility and its "causation" (destination);

B. contracts and rate structure;

C. work orders under which each of the facilities were constructed;

D. standard costing procedures and accounting principles; and

E. standard utility business practices.

In determining the investment cost of each segment, the following sources were used:

A. The accounting records maintained by the Plant Investment Section.

B. The equipment catalog from the Division of Materials and Procurement.

C. The cost studies of the Division of Substation and Control Engineering. These studies provide the cost breakdown for major equipment installations and indicate the relationship of equipment cost to the total cost, including installation and costs associated with specific accessory equipment that form such integral units as line terminals.

In order to segment the FCRTS, the plans for service (work orders) and the existing contracts are examined to determine the types of services provided by specific facilities. Each facility is analyzed using the system one-line diagrams in conjunction with the power flow studies to assign it to the proper segment. Only those services constituting the significant use of the facilities are considered; incidental services are ignored, as are any emergency uses of the facilities. The investment cost of each segmented facility is then determined from the accounting records. Some substation facilities are common to more than one segment. Their costs are divided respectively among the major segments served from the substation.

Some powerhouse switchyard facilities (Corps and Bureau) are functionalized as transmission (ref. Appendix A, Chapter VI). Normally, the step-up transformer is the interface between the generating source and the transmission system and is functionalized as generation. If the switchyard has a significant amount of high-voltage switching equipment on the high side of the transformer and there are lines going directly to a load center rather than to a BPA Generation-Integration substation, the pertinent facilities are functionalized to transmission and segmented to the respective segment serving the load for the determination of the cost of service.

The O&M expenses for each transmission line and substation in each segment are derived from O&M expenses recorded for the previous 3 years. Averages are computed which are used in the determination of the cost of

service to segment the projected O&M for BPA's rate proposals. By using these historical averages, potential biases resulting from scheduling or weather patterns in a particular year are minimized.

RESULTS. The results of the segmentation analysis are contained in Tables A through D that follow. The individual line and substation investments as of September 30, 1985, displayed in the analysis, are summarized in Table A-4. Because of the timing of this study, certain adjustments have been made to incorporate the actual investment data as of September 30, 1986. The necessary degree of detail for individual investments is not yet available. However, the total FY 1986 investment for lines and substations is available and has been incorporated in this study. The forecasted FY 1986 plant additions from the Initial Proposal are used to prorate the actual additions to the individual segments in Table A-3. (The forecasted FY 1986 additions were revised for the Supplemental Proposal to include the actual costs of the Garrison-Taft line in the Network segment.) The resulting FY 1986 investment base is summarized in Table A-2. These investments are used to distribute the actual FY 1986 substation spares and accumulated depreciation in Table A-1. In Table A the forecasted additions (from Chapter VII) are added to the investment base to determine the BPA segmented plant investment through FY 1989.

The results of the segmentation analysis for the Corps and Bureau are summarized in Tables B and C, respectively.

The 3-year average of O&M for each segment is listed in Table D; these are used to calculate percentages for projected transmission O&M. The 3-year averages and ratios are used to split both operation and maintenance between lines and substations in Table D.

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TABLE A
BONNEVILLE POWER ADMINISTRATION
SUMMARY OF SEGMENTED PLANT
($000)

	A TOTAL 9/30/86 INVEST 1/	B 1987 ESCALATED ADDITIONS	C TOTAL 1987 INVEST	D 1988 ESCALATED ADDITIONS	E TOTAL 1988 INVEST	F 1989 ESCALATED ADDITIONS	G TOTAL 1989 INVEST
1. DSI	54,559	578	55,137		55,137	615	55,752
2. IOU	8,333		8,333		8,333		8,333
3. PREFERENCE	159,752	774	160,526	2,650	163,176	1,530	164,706
4. GEN INTEG	41,113		41,113		41,113		41,113
5. SW INTERTIE	240,974	1,166	242,140	16,606	258,746	102,609	361,355
6. CANADIAN INT	31,668		31,668		31,668		31,668
7. MONTANA INT	122,431		122,431		122,431		122,431
8. FRINGE	208,567	4,343	212,910	2,136	215,046	17,899	232,945
9. NETWORK	1,813,840	29,292	1,843,132	93,163	1,936,295	9,055	1,945,350
10. PLANT HELD	1,692		1,692		1,692		1,692
11. PLANT LEASED	185		185		185		185
12. GEN PLANT 2/	286,445	58,110	344,555	79,063	423,618	49,988	473,606
13. TOTAL BPA	2,969,559	94,263	3,063,822	193,618	3,257,440	181,696	3,439,136

1. DOES NOT INCLUDE $39 NON-UTILITY PLANT
2. SPARES ARE INCLUDED WITH GENERAL PLANT ADDITIONS

TABLE A - 1
BASE YEAR DEPRECIATION ALLOCATION
BPA PLANT INVESTMENT 9/30/86
($000)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	DSI	IOU	PREF CUST DELIV	GENER INTEG	NW-SW INTER	CAN INTER	MONT INTER	FRINGE	NETWORK	MTRNG AND GN PLNT	PLANT LEASED	EMRGCY SPRS & PT SBS	OTHR PLNT	TOTAL 9/30/86
1. SUBSTATIONS 1/	53,293	8,158	144,006	26,250	150,179	4,955	13,271	74,883	527,375	617		19,582		1,022,569
2. METERING STATIONS										2,983				2,983
3. SUB TOTAL	53,293	8,158	144,006	26,250	150,179	4,955	13,271	74,883	527,375	3,600		19,582		1,025,552
4. EMRGNCY SPARES & PORT SUBS 2/	1,140	175	3,081	562	1,573	87		1,602	11,285	77		-19,582		
5. TOTAL SUBSTATIONS	54,433	8,333	147,087	26,812	151,752	5,042	13,271	76,485	538,660	3,677				1,025,552
6. ACCUMULATED DEPRECIATION	-8,301	-1,271	-22,431	-4,089	-42,896	-2,033	-1,178	-11,664	-82,146	-561				-176,570
7. NET SUBSTATIONS	46,132	7,062	124,656	22,723	108,856	3,009	12,093	64,821	456,514	3,116				848,982
8. LINES (INCL LEASD/OTHERS)	126		12,665	14,301	89,222	26,626	109,160	132,082	1,275,180		185			1,659,547
9. ACCUMULATED DEPRECIATION	-46		-4,649	-5,249	-27,106	-7,934	-5,539	-48,480	-468,052		-145			-567,200
10. NET LINES	80		8,016	9,052	62,116	18,692	103,621	83,602	807,128		40			1,092,347
11. GENERAL PLANT 3/										282,768				282,768
12. ACCUMULATED DEPRECIATION										-103,151				-103,151
13. NET GENERAL PLANT										179,617				179,617
14. OTHER PHYSICAL PLANT (LAND) 4/													39	39
15. PLANT FOR FUTURE USE (LAND)													1,692	1,692
16. TOTAL COMPLETED PLANT	54,559	8,333	159,752	41,113	240,974	31,668	122,431	208,567	1,813,840	286,445	185		1,731	2,969,598
17. TOTAL BPA COMPLETED PLANT 5/	54,559	8,333	159,752	41,113	240,974	31,668	122,431	208,567	1,813,840	286,445	185		1,692	2,969,559
18. ACCUMULATED DEPRECIATION	-8,347	-1,271	-27,080	-9,338	-70,002	-9,967	-6,717	-60,144	-550,198	-103,712	-145			-846,921
19. NET COMPLETED PLANT	46,212	7,062	132,672	31,775	170,972	21,701	115,714	148,423	1,263,642	182,733	40		1,692	2,122,638

1. DOES NOT INCLUDE GENERAL PLANT.
2. ALLOCATED TO SEGMENTS BY SUBSTATION INVESTMENT.
3. INCLUDES PORTABLE PROPERTY.
4. NON-DEPRECIABLE LAND.
5. DOES NOT INCLUDE NON-DEPRECIABLE LAND

TABLE A-2

SUMMARY OF INVESTMENT 1/

9/30/86

($)

SEGMENT	ABBREV.	A TRANSMISSION LINES	B SUBSTATIONS
DSI Delivery	DS	114,492	53,295,918
Fringe Area	F	132,078,429	74,887,620
General Plant	GP	0	641,244
Generation Integration	GI	14,306,049	26,249,112
Northern Intertie	I	26,623,215	4,955,175
Southern Intertie	I	89,221,859	150,181,488
Eastern Intertie	I	109,162,554	13,269,879
IOU Delivery	IO	0	8,155,606
Integrated Network	N	1,275,198,350	527,389,183
Preference Customer Delivery	PU	12,657,607	144,008,937
Total		1,659,362,555	1,003,034,162

1/ FY 1986 additions prorated by ratios in Table A-3.

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TABLE A-3
ADJUSTMENT OF FY 1986 ACTUAL INVESTMENT
($000)

SUBSTATIONS

	A FY 1985	B 1986 FRCSTD ADDTNS	C FRCSTD FY 1986	D 1986 FRCSTD ADDTNS	E PERCENT	F ADJSTMNT	G ADJSTD FY 1986 (C+F)
DSI	53,142	197	53,339	197	0.31	(46)	53,293
IDU	7,927	299	8,226	299	0.46	(68)	8,158
PREF CUST	139,139	6,311	145,450	6,311	9.80	(1,444)	144,006
GENER-INTEG	26,120	169	26,289	169	0.26	(39)	26,250
SW INTERTIE	141,514	11,236	152,750	11,236	17.44	(2,571)	150,179
CANADIAN INTERTIE	4,955	0	4,955	0	0.00	0	4,955
MONTANA INTERTIE	13,250	27	13,277	27	0.04	(6)	13,271
FRINGE	70,305	5,937	76,242	5,937	9.22	(1,359)	74,883
NETWORK	496,343	40,237	536,580	40,237	62.47	(9,205)	527,375
GENERAL PLANT (METER)	617		617		0.00	0	617
TOTAL	953,312	64,413	1,017,725	64,413	100.00	(14,738)	1,002,987
ACTUAL 1986			1,002,987				
ADJUSTMENT			(14,738)				

LINES

	A FY 1985	B 1986 FRCSTD ADDTNS	C FRCSTD FY 1986	D 1986 FRCSTD ADDTNS	E PERCENT	F ADJSTMNT	G ADJSTD FY 1986 (C+F)
DSI	20	93	113	93	0.04	13	126
IDU	0	0	0	0	0.00	0	0
PREF CUST	12,444	193	12,637	193	0.09	28	12,665
GENER-INTEG	14,282	17	14,299	17	0.01	2	14,301
SW INTERTIE	89,222	0	89,222	0	0.00	0	89,222
CANADIAN INTERTIE	26,600	23	26,623	23	0.01	3	26,626
MONTANA INTERTIE	95,135	12,268	107,403	12,268	5.92	1,757	109,160
FRINGE	127,458	4,045	131,503	4,045	1.95	579	132,082
NETWORK	1,057,244	190,640	1,247,884	190,640	91.97	27,296	1,275,180
LEASED PLANT	185	0	185	0	0.00	0	185
TOTAL	1,422,590	207,279	1,629,869	207,279	100.00	29,678	1,659,547
ACTUAL 1986			1,659,547				
ADJUSTMENT			29,678				

TABLE A-4

SUMMARY OF INVESTMENT 1/

9/30/85

($)

SEGMENT	ABBREV.	A TRANSMISSION LINES	B SUBSTATIONS
DSI Delivery	DS	19,709	53,141,855
Fringe Area	F	127,426,499	70,305,474
General Plant	GP	0	641,244
Generation Integration	GI	14,282,353	26,119,897
Northern Intertie	I	26,599,519	4,955,175
Southern Intertie	I	89,221,859	141,514,174
Eastern Intertie	I	95,134,653	13,250,000
IOU Delivery	IO	0	7,926,996
Integrated Network	N	1,057,275,828	496,342,903
Preference Customer Delivery	PU	12,444,345	139,138,543
Total		1,422,404,765	953,336,261

1/ Column A is a summary of Chapter I and Column B is a summary of Chapter II.

(5556E)

TABLE B
CORPS OF ENGINEERS
SUMMARY OF SEGMENTED PLANT
($000)

	A	B	C	D	E	F	G
	INVESTMENT 9/30/86	1987 ADDTNS	INVESTMENT 9/30/87	1988 ADDTNS	INVESTMENT 9/30/88	1989 ADDTNS	INVESTMENT 9/30/89
1. BONNEVILLE							
2. GENERATION INTEGRATION	3,843		3,843		3,843		3,843
3. NETWORK	4,322		4,322		4,322		4,322
4. TOTAL	8,165		8,165		8,165		8,165
5. DWORSHAK							
6. NETWORK	1,819		1,819		1,819		1,819
7. ICE HARBOR							
8. GENERATION INTEGRATION	1,531		1,531		1,531		1,531
10. TOTAL CORPS TRANSMISSION:							
11. GENERATION INTEGRATION	5,374		5,374		5,374		5,374
12. NETWORK	6,141		6,141		6,141		6,141
13. TOTAL	11,515		11,515		11,515		11,515

TABLE C
U. S. BUREAU OF RECLAMATION
SUMMARY OF SEGMENTED PLANT
($000)

	A	B	C	D	E	F	G
	INVESTMENT 9/30/86	1987 ADDTNS	INVESTMENT 9/30/87	1988 ADDTNS	INVESTMENT 9/30/88	1989 ADDTNS	INVESTMENT 9/30/89
1. BOISE							
2. GENERATION INTEGRATION	264		264		264		264
3. NETWORK	1,008		1,008		1,008		1,008
4. GENERAL PLANT	75		75		75		75
5. TOTAL	1,347		1,347		1,347		1,347
6. COLUMBIA BASIN							
7. GENERATION INTEGRATION	46,270	4,374	50,644	2,225	52,869	461	53,330
8. DELIVERY	2,125		2,125		2,125		2,125
9. NETWORK	83,808	3,579	87,387	1,821	89,208	377	89,585
10. FRINGE	266		266		266		266
11. GENERAL PLANT	8,479		8,479		8,479		8,479
12. TOTAL	140,948	7,953	148,901	4,046	152,947	838	153,785
13. HUNGRY HORSE							
14. NETWORK	280		280		280		280
15. GENERAL PLANT	1,983		1,983		1,983		1,983
16. TOTAL	2,263		2,263		2,263		2,263
17. MINIDOKA-PALISADES							
18. GENERATION INTEGRATION	538		538		538		538
19. DELIVERY	683		683		683		683
20. FRINGE	1,569		1,569		1,569		1,569
21. GENERAL PLANT	166		166		166		166
22. TOTAL	2,956		2,956		2,956		2,956
23. YAKIMA							
24. GENERATION INTEGRATION	372		372		372		372
25. GENERAL PLANT	729		729		729		729
26. TOTAL	1,101		1,101		1,101		1,101
27. TOTAL USBR TRANSMISSION:							
28. GENERATION INTEGRATION	47,444		51,818		54,043		54,504
29. NETWORK	85,096		88,675		90,496		90,873
30. DELIVERY	2,808		2,808		2,808		2,808
31. FRINGE	1,835		1,835		1,835		1,835
32. GENERAL PLANT	11,432		11,432		11,432		11,432
33. TOTAL	148,615		156,568		160,614		161,452

TABLE D
BPA TRANSMISSION O&M
($000)

BASIS FOR SPLIT OF TRANSMISSION OPERATIONS AND MAINTENANCE
BETWEEN LINES AND SUBSTATIONS

	A	B	C	D	E	F
	PERCENT	THREE YEAR AVERAGE	THREE YEAR TOTAL	FY 1985	FY 1984	FY 1983
1. OPERATIONS						
2. LINES	8.0339	2,332	6,997	2,833	2,353	1,811
3. SUBSTATIONS	91.9661	26,695	80,085	29,095	27,783	23,207
4. TOTAL OPERATIONS	100.0000	29,027				
5. MAINTENANCE						
6. LINES	32.0894	23,140	69,421	27,596	25,967	15,858
7. SUBSTATIONS	67.9106	48,971	146,914	63,559	53,634	29,721
8. TOTAL MAINTENANCE	100.0000	72,111				

BASIS FOR SEGMENTATION

	A	B	C	D	E	F	G	H	I	J
	TOTAL	GENER INTEG	NETWORK	NW-SW INT	CANADIAN INT	MONTANA INT	FRINGE AREA	PREF CUST DEL	DSI	IO
9. LINES:										
10. 3 YR AVERAGE O&M	26,885	225	18,403	566	331		6,895	465		
11. PERCENT	100.0000	0.8369	68.4508	2.1053	1.2312		25.6463	1.7296		
12. SUBSTATIONS:										
13. 3 YR AVERAGE O&M	67,703	2,322	34,205	9,004	385		4,905	10,938	5,009	
14. PERCENT	100.0000	3.4297	50.5221	13.2993	0.5687		7.2449	16.1559	7.3985	1.3

1/ MONTANA INTERTIE O&M PROJECTIONS DIRECTLY IDENTIFIED BY CONTRACT CHARGE

TABLE D-1

FY 1985

SUMMARY OF SEGMENTED THREE-YEAR AVERAGE O&M 1/

($)

SEGMENT	ABBREV.	A TRANSMISSION LINES	B SUBSTATIONS
DSI Delivery	DS	302	5,009,454
Fringe Area	F	6,894,814	4,905,588
General Plant	GP	0	12,269,064
Generation Integration	GI	224,923	2,321,969
Northern Intertie	I	330,596	385,352
Southern Intertie	I	566,322	9,004,399
Eastern Intertie	I	254,885	221,622
IOU Delivery	IO	0	935,354
Integrated Network	N	18,403,000	34,205,175
Preference Customer Delivery	PU	465,022	10,938,224
Total O&M		27,139,864	80,196,201

1/ Column A is a summary of Chapter IV and Column B is a summary of Chapter V.

(5556E)