EXHIBIT NO. _____ (WAG-13)
DOCKET NO._____
2003 POWER COST ONLY RATE CASE
WITNESS: WILLIAM A. GAINES

BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, INC., Respondent.	Docket No. _____

DIRECT TESTIMONY OF WILLIAM A. GAINES ON BEHALF OF PUGET SOUND ENERGY, INC.

Exhibit Supporting Snoqualmie Falls Relicensing

CONTENTS—

Document 1—PSE's initial FERC relicensing filing includes the analysis filed at FERC justifying the economics of relicensing and expanding generation capacity at Snoqualmie Falls. Documentation is from Puget Power's "Application for New License, Major Modified Project, Snoqualmie Falls Project, FERC Project 2493, King County, Washington." November 1991. The following are included:

Vol. 1. Exhibit D, "Project Costs and Financing."
Vol. 3. Appendix 2A, "Puget's Power's 1991 Avoided Cost Filing with WUTC."
Vol 3. Appendix 2B, "Puget Power's 1991 Avoided Cost and Project Cost Filing with WUTC."

Document 2—In 1995, PSE responded to FERC concerning the impacts the draft Environmental Impact Statement would have on rendering the project uneconomic. Included is Puget Power's letter to FERC and supporting work papers, *"Puget Sound Power and Light Company's Comments on Draft Environmental Impact Statement."* February 17, 1995.

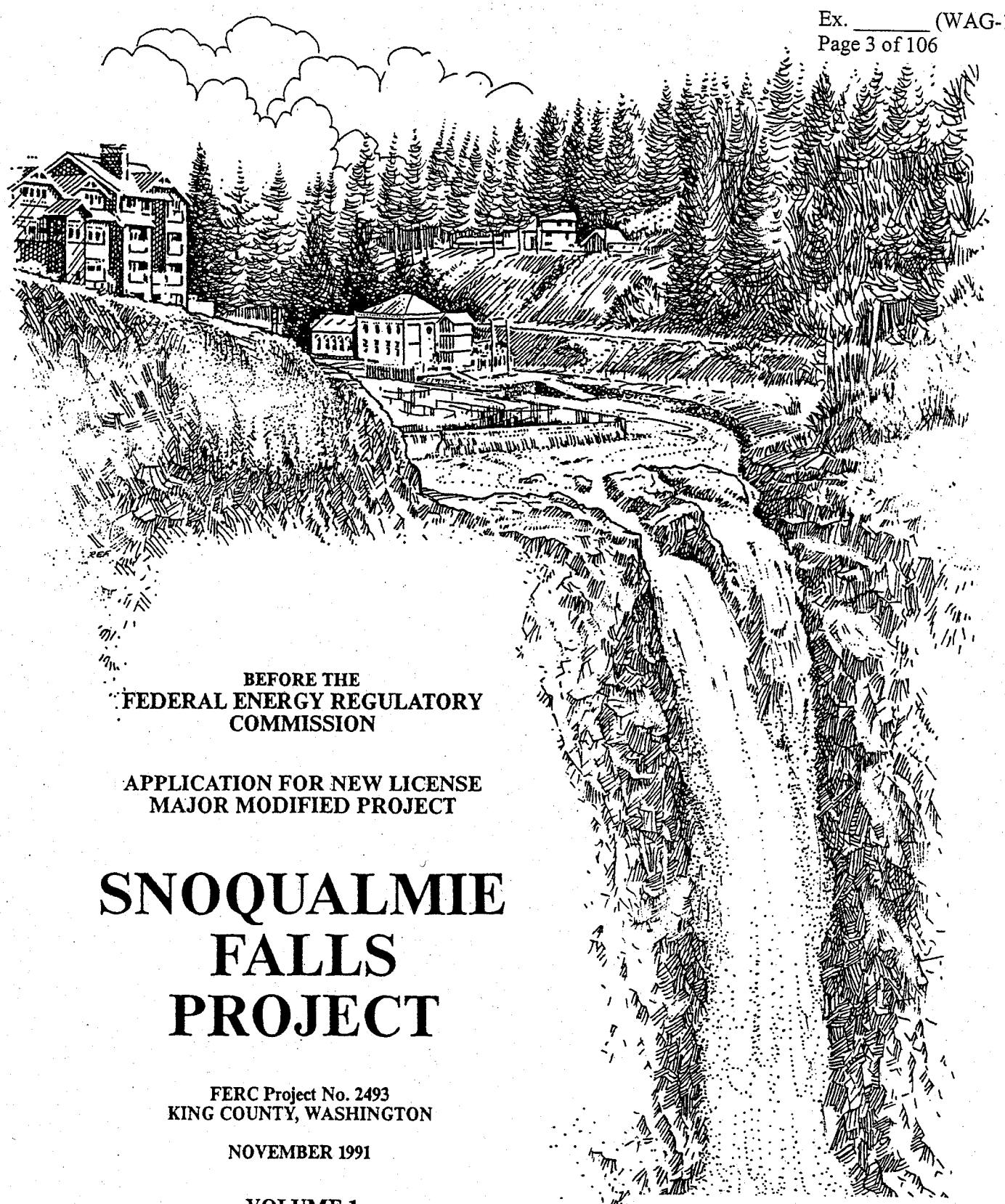
Document 3—Technical information was provided to FERC to support the Company's refurbishment effort rather than continuing to pursue capacity expansion, given the concerns expressed in the impact of the draft EIS. Included is Puget Power's letter to FERC and supporting technical information, "Snoqualmie Falls, FERC No. 2493: Supporting Technical Information". June 28, 1995.

Document 4—The most recent update of the Snoqualmie Falls relicensing efforts for review by Officers, dated April 29, 2003.

Snoqualmie Falls Relicensing

Document 1

Initial FERC Relicensing



BEFORE THE
FEDERAL ENERGY REGULATORY
COMMISSION

APPLICATION FOR NEW LICENSE
MAJOR MODIFIED PROJECT

SNOQUALMIE FALLS PROJECT

FERC Project No. 2493
KING COUNTY, WASHINGTON

NOVEMBER 1991

VOLUME 1
EXHIBITS A THROUGH D
EXHIBITS F THROUGH H

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DESTROY

PUGET SOUND POWER & LIGHT COMPANY
BELLEVUE, WASHINGTON

PUGET POWER

November 25, 1991

Ms. Lois Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street N.E.
Washington, D.C. 20426

Re: Puget Sound Power & Light Company
Application for a New License for the
Snoqualmie Falls Hydroelectric Project
FERC Project No. 2493

Dear Ms. Cashell:

Enclosed for filing pursuant to 18 C.F.R. § 16.10(f) are the original and five copies of Volumes 1 through 5 (containing the Initial Statement and Exhibits A-H) of Puget Sound Power & Light Company's (Puget Power's) Application for New License for the Snoqualmie Falls Hydroelectric Project, FERC No. 2493. As specified in the regulations, I also certify that five copies of Volumes 1 through 5 are being hand delivered to the Director, Division of Project Review, Office of Hydropower Licensing, and one copy is being mailed to each of the following:

Mr. Arthur C. Martin
Regional Director
Federal Energy Regulatory Commission
Portland Regional Office
1120 SW Fifth Ave, Suite 1340
Portland, OR 97204

Office of the Secretary
U.S. Department of the Interior
1842 C Street, N.W.
Washington, D.C. 20240

Mr. Dean Bibles
State Director
U.S. Bureau of Land Management
P.O. Box 2965
Portland, OR 97208

SNOQUALMIE FALLS PROJECT

FERC NO. 2493

APPLICATION FOR NEW LICENSE

VOLUME 1

EXHIBITS

A Through D
F Through H

NOVEMBER 1991

Puget Sound Power & Light Company
Bellevue, Washington

EXHIBIT D

PROJECT COSTS AND FINANCING

List of Tables

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EXHIBIT D

PROJECT COSTS AND FINANCING

1.0 ESTIMATED COSTS OF PROPOSED FACILITIES

1.1 LAND AND WATER RIGHTS

There will be no significant expenditure for acquisition of additional land or water rights.

1.2 DIRECT CONSTRUCTION COSTS

The direct construction cost for the proposed modifications and new facilities is estimated to be $ 46,553,000. The cost estimate is based on the 1991 price level and is summarized in Table D-1.

1.2.1 Total Capital Costs

The total capital cost for construction is estimated at $ 81,958,000. This total includes the direct costs presented in Exhibit D (Section 1.2), indirect costs, Puget Power overheads and Allowance for Funds Used During Construction (AFUDC). Attachment D-1 details the calculation of operation and maintenance and continued capital improvements. This attachment also details the capital cost of the existing Project and the proposed capital improvements. Total Project cost includes O&M, existing Project, and proposed improvements. All costs are presented in terms of present value in 1996 dollars (the base year for financing). The total Project cost is $144,724,000. This equates to a levelized power cost for the entire Project (based on proposed generation estimates presented in Table B-9) of approximately 40.3 mills/kWh. Puget's nominal levelized avoided cost (see Exhibit D, Section 4.3) is estimated at 87.2 mills/kWh for an equivalent amount of generation.

An estimate of the power cost of the increased generation was completed as a means of optimizing Project capacity based on the avoided cost model (see Appendix 2B, Comparison Between Avoided Cost and Project Cost). This ensures that the proposed incremental block of generation (see Table B-9) available with the new facilities is also cost effective in terms of total benefits and total costs. Attachment D-2 details the assessment of costs associated with the increased generation.

Costs of incremental power generation do not include proposed recreation facilities or diversion dam improvements. Further assumptions are that the upgrades to Units 1 and 2 at Plant 2 and replacement of Unit 5 in Plant 1 will take place as necessary improvements for continued reliable service.

The total construction costs (direct costs + indirect costs + Puget overhead + AFUDC) for incremental power generation are $42,513,000, escalated to the year of expenditure (1996). Levelizing this total at Puget's levelized fixed charge rate produces an annual cost of $7,347,000 over the life of the Project. Based on the incremental generation of 97,200 MWh, the cost of increased generation is approximately 76 mills/kWh. When operation and maintenance and continued capital improvement estimates (see Attachment D-1) are added to this, the total is approximately 85 mills/kWh.

TABLE D-1
PUGET SOUND POWER AND LIGHT COMPANY
SNOQUALMIE FALLS HYDROELECTRIC PROJECT

ESTIMATED COSTS OF PROPOSED MODIFICATIONS AND NEW FACILITIES

FERC Acct No.	Description		Amount
	HYDRAULIC PRODUCTION PLANT		
331	Structures and Improvements		$907,000
	Recreation (331.2)		$1,926,000
332	Reservoirs, Dams and Waterways		$19,984,000
	Recreation (332.2)		$866,000
333	Turbines and Generators		$15,763,000
334	Accessory Electrical Equipment		$1,119,000
335	Miscellaneous Mechanical Equipment		$580,000
336	Roads, Railroads and Bridges		$4,000
	TRANSMISSION PLANT		
353	Station Equipment		$720,000
	GENERAL PLANT		
390	Structures and Improvements		$1,036,000
397	Communication Equipment		$120,000
	SUBTOTAL DIRECT COSTS		$43,025,000
	Sales Tax	8.2%	$3,528,000
	TOTAL DIRECT COSTS		$46,553,000
	Engineering	15%	$6,983,000
	Administrative	5%	$2,328,000
	SUBTOTAL		$55,864,000
	Puget Overhead	4.5%	$2,514,000
	SUBTOTAL		$58,378,000
	AFUDC	10%	$5,838,000
	TOTAL COST ($ 1991)		$64,216,000
	ESCALATED TOTAL COST ($1996)	5% PER ANNUM	$81,958,000

1.2.2 Contingencies

The contingencies for this Project range between 20% and 40% of the direct construction costs and are included as part of the total in Exhibit D, Section 1.2. The level of contingency is specific to the design of each individual component of the proposed development.

1.3 INDIRECT CONSTRUCTION COSTS

Indirect construction costs include such subheadings as Engineering and Administration. The combined total of indirect costs is estimated at 20% of the direct construction costs (the total for each item is shown in Table D-1).

1.3.1 Puget Power Overheads

An internal construction overhead total is applied to all capital projects. This total for the Snoqualmie Falls Project is estimated at 4.5% of the total direct and indirect construction costs (see Table D-1).

1.4 INTEREST DURING CONSTRUCTION

The value of AFUDC for this Project is estimated at 10% of the total of all direct costs, indirect costs and Puget overheads.

2.0 PROJECT TAKEOVER VALUE

2.1 FAIR VALUE

The value of the Project to Puget Power is best evaluated in terms of the long-term costs to replace the electric power generated at the Project. Because much of the original cost of the existing Project has long since been depreciated, and because the Project has low operation and maintenance costs, the cost of the Project power is much lower than Puget Power's alternatives for replacing it.

The estimated present value of the cost of Project power versus replacement power costs is shown in Table D-2. The details of these calculations are included as Appendix 2B, Comparison Between Avoided Cost and Project Cost.

Table D-2

Power Cost Impact of Losing
Snoqualmie Falls Project License

Present Value in 1996 ($1000)

Replacement Costs (Appendix 2B)	$313,447
Project Costs (Attachment D-1)	144,724

The replacement power cost estimate is based on the Company's latest avoided cost estimate (see Appendix 2A, Puget Power's 1991 Avoided Cost Filing with WUTC). Like the Project cost estimates, the avoided cost for Project power was evaluated over a

40-year period and converted to a present value in 1996 at the same discount rate. The replacement cost estimate is based on available energy from the proposed new facilities detailed in Exhibit A.

2.2 NET INVESTMENT

Puget Power's net investment in the Project as of December 31, 1990, is set forth in Table D-3.

Table D-3

Original Cost and Net Investment, Snoqualmie Falls Project

Balances as of 12-31-90	Book Cost	Accumulated Provision For Amortization or Depreciation	Book Value
Plant 1			
Intangible	41,094.48	(32,875.46)	8,219.02
Hydraulic Production			
Land	31,259.77	0.00	31,259.77
Other	3,491,454.18	(1,026,699.65)	2,464,754.53
Transmission	434,457.05	(245,377.07)	189,079.98
	3,998,265.48	(1,304,952.18)	2,693,313.30
Plant 2			
Intangible	41,094.48	(32,875.46)	8,219.03
Hydraulic Production			
Land	0.00	0.00	0.00
Other	3,543,858.25	(1,171,812.04)	2,372,046.21
Transmission	496,309.01	(149,946.00)	346,363.01
	4,081,261.74	(1,354,633.50)	2,726,628.25
TOTAL SNOQ. PROJECT PLANT	8,079,527.22	(2,659,585.68)	5,419,941.55

2.3 SEVERANCE DAMAGES

Although generation from the Project is particularly valuable to the Company because of its location in the heart of the Company's service territory (see Exhibit H, Section 2.4), a dollar value for severance damages to the Company resulting from a takeover is difficult to quantify, but it is real and significant.

3.0 ANNUAL COSTS

The total capital cost for the proposed facilities to be constructed at the Project is estimated at $81,958,000. This estimate includes costs inflated to the year of expenditure and AFUDC. Construction is expected to occur in the years 1994 through 1996, with improvements to Plants 1 and 2 entering ratebase at the end of 1996.

This investment is expected to be financed according to Puget Power's capital structure and cost rates. Table D-4 illustrates the estimated average cost of capital over the construction period:

Table D-4

Average Cost of Capital Over Construction Period

	Capital Structure	Marginal Cost	Weighted Forecasted Cost Rate
Short-Term Debt	4.4%	7.49%	0.33%
Long-Term Debt	46.4%	9.05%	4.20%
Preferred Equity	7.7%	8.84%	0.68%
Common Equity	41.5%	12.52%	5.20%
Estimated Cost of Capital	100.0%		10.41%

The average annual cost of power is calculated by determining the levelized annual cost, using the "Project Cost" from Table D-2, and then dividing by Project generation. This results in a levelized annual cost of 40.3 mills per kilowatt hour. This cost includes depreciation, state and federal taxes, operating and maintenance expenses, and capital costs. It also takes into account the reduced generation resulting from the proposed base daytime flow of 100 cfs and nighttime flow of 25 cfs.

4.0 VALUE OF PROJECT POWER

4.1 AVOIDED COST FORECAST

The value of the power generation from the Snoqualmie Falls Project was evaluated based upon the Company's latest avoided cost filing submitted to the Washington Utilities and Transportation Commission in May 1991 (see Appendix 2A). This forecast was developed following the Company's latest least cost plan and is consistent with the assumptions and results of the least cost planning process. However, where the least cost plan looks at a wide range of futures and develops various resource plans to address uncertainties, the avoided cost forecast requires that a single point estimate be used. The avoided cost forecast from May 1991 falls within the range of costs identified in the least cost plan.

The avoided cost forecast is divided into seasonal and firm and nonfirm energy components based upon the Company's power supply situation. Temperature dependent electricity uses, especially heating applications, create higher loads during the winter. During the summer, the relatively mild temperatures experienced in the Northwest cause air conditioning to have little overall impact on loads. Winter generation is therefore more valuable to Puget Power, and the avoided cost forecast reflects this seasonal differentiation.

Generation in the Pacific Northwest region is primarily hydroelectric. Because the annual output from hydroelectric facilities can vary widely with weather conditions, regional utilities have developed a methodology to determine the amount of energy from a hydroelectric project that should be considered available on a firm or reliable basis. The methodology involves reviewing historical streamflow data for regional projects to determine over which period the entire system would have produced the least amount of electric power. Then the amount that an individual project would have produced over that period is evaluated as firm production, and the amount on average over that level is considered nonfirm. Because nonfirm power cannot be relied upon to be available under all weather conditions, it is assigned a lower value than firm energy. Puget Power bases

the nonfirm avoided cost upon the expected variable resource operating costs and spot market purchases to serve the top 100 MW of load.

The firm avoided cost forecast was derived using three distinct time periods based upon Puget Power's resource requirements and the availability and cost of generating resource alternatives. During the first period, from 1991 to 1992, Puget Power has a need for firm supply, and new utility projects are not available because of construction lead times. The avoidable resource for period 1 is a short-term utility firm purchase, the price for which is based upon BPA's latest forecast of the New Resources rate.

The second period lasts from 1993 to 1995. During this time, Puget Power is very close to load and resource balance and additional firm resources are not needed. Therefore, the avoided cost for period 2 is based on Puget Power energy-only production costs.

The third period begins in 1996 when Puget Power again needs additional firm resources. A new combined cycle combustion turbine was selected as the avoidable resource because of its cost and expected availability.

4.2 DESCRIPTION OF PROJECT OUTPUT FOR AVOIDED COST CALCULATION

Because the avoided cost forecast consists of seasonal firm and nonfirm energy and annual capacity components, the Snoqualmie Falls Project generation must be broken into these categories to compare with avoided cost. The utilities of the Pacific Northwest have agreed that the historical period of lowest streamflow that should be used to determine the amount of firm energy available from hydroelectric resources is the period from September 1928 through February 1932. The generation that the Project would have produced on average each month assuming the streamflow that occurred over that period is considered to be firm energy. The nonfirm energy (energy not considered to be reliably available from year to year) equals the difference between the average monthly energy production over the entire streamflow record and the amount of firm production.

The Project is a "run-of-river" facility and as such does not offer dispatchable capacity. For this type of resource, the avoided cost evaluation is performed with the capacity set equal to the average rate of firm energy generation. Shown in Table D-5 are the results of the firm and nonfirm energy and firm capacity determinations which are based on the hydrological records and the synthesis of critical period flows discussed in Exhibit E2, Section 2.2.3.

Table D-5

Firm and Nonfirm Energy Production by Month and Season

Month	Average MWh	Firm MWh	Nonfirm MWh	Capacity* MW-month
Jan	35,765	20,390	15,375	27.4
Feb	32,609	24,318	8,291	36.2
Mar	34,156	34,156	0	45.9
Apr	38,622	38,622	0	53.6
May	47,318	45,265	2,053	60.8
Jun	43,053	37,130	5,923	51.6
Jul	26,743	13,437	13,306	18.1
Aug	11,971	5,449	6,522	7.3
Sep	15,120	6,399	8,721	8.9
Oct	22,256	17,872	4,384	24.0
Nov	34,971	19,476	15,495	27.1
Dec	38,754	22,041	16,713	29.6
Total	381,338	284,555	96,783	390.5
Winter	213,631	144,652	68,979	
Summer	167,707	139,903	27,804	

* Firm capacity equals the average rate of firm energy delivery (e.g. for January: firm capacity = 20,390 MWh ÷ 744 hrs = 27.4 MW).

4.3 ESTIMATED ANNUAL VALUE OF PROJECT POWER BASED ON AVOIDED COST

The avoided cost value of the Project power was evaluated over a 40-year period beginning in 1997. The analysis, included as Appendix 2B (Comparison Between Avoided Cost and Project Cost), results in a present value avoided cost for the Project generation of $313,447,000 in 1996. Converting the present value to a nominal levelized avoided cost per unit yields a value of 87.2 mills/kWh for Project generation. Table D-6 contains the annual value of the Project generation.

Table D-6

Annual Value of Project Generation

Year	Annual Value ($000)	mills/kWh
1997	$19,876	52.1
1998	$21,073	55.3
1999	$22,428	58.8
2000	$23,855	62.6
2001	$24,862	65.2
2002	$26,152	68.6
2003	$27,363	71.8
2004	$28,580	74.9
2005	$29,698	77.9
2006	$31,019	81.3
2007	$32,432	85.0
2008	$33,859	88.8
2009	$35,355	92.7
2010	$36,923	96.8
2011	$38,575	101.2
2012	$40,307	105.7
2013	$42,136	110.5
2014	$44,082	115.6
2015	$46,128	121.0
2016	$48,214	126.4
2017	$50,397	132.2
2018	$52,700	138.2
2019	$55,116	144.5
2020	$57,648	151.2
2021	$60,315	158.2
2022	$63,106	165.5
2023	$66,043	173.2
2024	$69,121	181.3
2025	$72,358	189.7
2026	$75,759	198.7
2027	$79,323	208.0
2028	$83,067	217.8
2029	$87,001	228.1
2030	$91,131	239.0
2031	$95,466	250.3
2032	$100,016	262.3
2033	$104,793	274.8
2034	$109,818	288.0
2035	$115,086	301.8
2036	$120,619	316.3

As set forth in Appendix 2B, the avoided cost components are applied to the corresponding generation components determined for the Project. For example, in the year 1997, the avoided cost value is determined as follows:

Project Data (from Table D-6):					
Winter Firm Energy				144,652	MWh
Summer Firm Energy				139,903	MWh
Annual Capacity				390.5	MW-months
Winter Nonfirm Energy				68,979	MWh
Summer Nonfirm Energy				27,804	MWh
Avoided Cost Data (from Appendix 2A)					
Winter Firm Energy Rate				48.5	mills/kWh
Summer Firm Energy Rate				40.4	mills/kWh
Capacity Rate				7.86	$/kW-months
Winter Nonfirm Energy Rate				30.0	mills/kWh
Summer Nonfirm Energy Rate				26.0	mills/kWh
Calculations:					($000)
Winter Firm Energy Value	144,652	x	48.5	=	7,020
Summer Firm Energy Value	139,903	x	40.4	=	5,645
Capacity Value	390.5	x	7.86	=	3,069
Winter Nonfirm Energy Value	68,979	x	30.0	=	2,069
Summer Nonfirm Energy Value	27,804	x	26.0	=	723
Total Direct Avoided Costs					18,527
Gross-up for Revenue Taxes (6.79%)					19,876

These calculations are repeated for each year of analysis to establish the avoided cost value of the Project as shown in table D-6.

5.0 ALTERNATIVE ENERGY SOURCES

5.1 LEAST COST PLAN

Puget Power began formal integrated least cost planning in early 1986. Every two years, the Company produces a new least cost plan for submission to the Washington Utilities and Transportation Commission. The Company's most recent least cost plan, completed in December 1989, sets forth Puget Power's forecast power needs and identifies integrated supply and demand strategies for meeting growth under a range of possible future conditions (see Appendix 3, Puget Power's 1989 Least Cost Plan).

As part of the least cost planning process, Puget Power examines the cost and availability of generation and conservation resource alternatives. Tables D-7 and D-8 list the conservation and generation resources considered in the Company's most recent least cost plan.

Table D-7

Conservation Alternatives Considered in Least Cost Plan

RESIDENTIAL CONSERVATION
- Existing single family space heat
- Existing multi-family space heat
- New single family space heat
- New multi-family space heat
- Water heating conservation
- Refrigerators and freezers
- Heat pumps
- Energy efficient showerheads
- Clothes washers and dishwashers
- Clothes dryers
- Mechanical thermal wraps for water heating
- Hot water heat pumps and solar water heaters
- Residential lighting
- Air conditioning
- Zone space heating
- Manufactured home weatherization

COMMERCIAL CONSERVATION
- Heating, ventilation, air conditioning optimization
- Roof/floor insulation
- Windows
- Indoor lighting
- Hot water heat recovery
- Grocery refrigeration
- Outdoor lighting

INDUSTRIAL CONSERVATION
- Adjustable speed drives
- Motor controls
- Heating, ventilation, air conditioning optimization
- Indoor lighting
- Outdoor lighting
- Process specific efficiency improvements

Table D-8

Generation Alternatives Considered in Least Cost Plan

Small hydroelectric projects
Combined cycle combustion turbines
Simple cycle combustion turbines
Integrated gasification combined cycle combustion turbine
Pressurized fluidized bed combustion coal-fired
Atmospheric fluidized bed combustion coal-fired
Pulverized coal with SO_2 scrubbers
Nuclear light water reactor
Geothermal
Fuel cell
Wind turbine
Solar
Purchases from other utilities
Purchases from waste-to-energy facilities
Purchases from wood-fired facilities
Conservation purchases from other utilities
Cogeneration

The least cost plan does not develop a single set of resources to meet a fixed load over the 20-year planning horizon. Rather, the plan uses scenarios to examine uncertainties and to determine those actions that Puget Power should take over the next few years to prepare itself for what may actually happen in the future.

Puget Power developed six scenarios and analyzed each separately by asking, "If this future were to unfold, what selection of resources, both demand and supply, would provide the lowest cost for our customers and meet their expectations for a quality environment, a sound economy and a vibrant community?" The six scenarios studied were:

- Economic boom that assumed continuing high growth of the local and regional economy.
- Economic bust that assumed a downturn in the economy.
- Instability that assumed extreme business cycles over the planning period.
- Declining demands that assumed a drop in energy use per customer.
- Deregulation that assumed a greater participation by unregulated power producers in supplying electricity.
- Global warming that assumed tough environmental laws passed in response to concerns regarding air emissions.

The descriptions and assumptions for each scenario resulted in different resources being selected to meet future needs. The action plan was determined by examining the results for the scenarios and determining resources and resource decisions that were common to various scenarios and thus worked over a variety of futures.

In summary, the least cost plan concludes that Puget Power will need additional resources. Among the resources that the plan emphasizes are conservation, utility purchases, and resources acquired through competitive bidding.

5.2 COMPETITIVE BIDDING FOR RESOURCES

In addition to the least cost planning evaluation of resource alternatives, Puget Power has also conducted a competitive solicitation for resources that provided a direct measure of the availability and cost of resources from non-utility generation and conservation suppliers. In June 1989, Puget Power issued a Request for Proposals (RFP) seeking 100 aMW of electricity from commercial and industrial conservation or generation projects. In response to the RFP, Puget Power received 41 project proposals representing over 1200 aMW of potential resources.

Each bid was evaluated for compliance with the terms of the solicitation. The bids that qualified were evaluated against evaluation criteria set forth in the RFP including: the experience of the project sponsor, the bid price, the financial risk placed upon Puget Power, environmental effects, dispatchability, compatibility with Puget Power's electric system, reliability of the resource, technological feasibility, the term of the proposed contract, the seasonal and daily shape of power deliveries, and the proposed on-line date of the resource. Following the evaluation of all bids, eight projects – five conservation and three generation, totalling 167 aMW – were selected to execute contracts with Puget Power. Table D-9 shows the expected energy from these projects. (Exhibit B, Section 6.2.2 references the capacity at the generating projects.)

Table D-9

Projects Selected through June 1989 Request for Proposals

Company	Type	Energy
Abacus	Conservation	4.0 aMW
NW Cogeneration	Conservation	1.2 aMW
Puget Energy Svc	Conservation	3.2 aMW
Sycom Corp	Conservation	0.7 aMW
Washington State Energy Office	Conservation	0.5 aMW
Enserch Dev. Corp.	Gas cogeneration	130.0 aMW
Trans-Pac Geothermal	Geothermal	10.0 aMW
Wheelabrator Pierce	MSW	17.0 aMW
TOTAL		166.6 aMW

Although the specific prices of each bid proposal are confidential to respect the desires of the bidders and to protect the integrity of the competitive process, it can be stated that each of the winning projects is at or below Puget Power's avoided costs. The competitive bid process provided some validation of the avoided cost forecast in that most proposals were in a range around that level.

The second RFP for conservation and generation resources was issued in September 1991. Project proposals under this RFP are due January 9, 1992.

6.0 CONSEQUENCES OF LICENSE APPLICATION DENIAL

The most obvious consequence to Puget Power of the denial of this License Application would be the loss of the economical Project generation to serve the Company's growing load. This impact would be felt in two important ways:

1. It would accelerate the need to develop or acquire replacement resources.

2. The cost of such replacement resources would be higher than the cost of Project power, with the increased cost borne by Puget Power's customers in the form of higher electric rates.

The difference between the cost of Project power and Puget Power's avoided cost is set forth in Exhibit D, Section 2.1, with the details of the calculation shown in Appendix 2B, Comparison Between Avoided Cost and Project Cost. The net present value of the increased cost of replacing the power from the proposed Project over forty years would be $168,723,000.

Denial of the License Application and discontinuance of generation by the Project would have an adverse impact on the reliability of power supply not only to Puget Power but to the entire Puget Sound region. See Exhibit H, Section 2.4 for a complete discussion of this impact.

Consequences of Application denial would also include loss of many public benefits provided by the Project, most significantly the extensive recreation facilities currently provided by Puget Power and the new facilities proposed in this application. See Exhibit E7.

The discontinuance of Puget Power's Project related recreation activities would adversely affect the many people who visit the Project recreation facilities (currently about 1.5 million per year) as well as the thousands of school children who attend educational tours of the Project each year.

6.1 ALTERNATIVE USES OF PROJECT SITE

Because the Snoqualmie Falls Project is a valuable existing, operating hydroelectric project which also offers recreation facilities used by 1.5 million people per year, the idea of alternatives to its continued operation seems contrary to the overall public interest. The Snoqualmie Indians have expressed a preference that the Project not generate power and the site be returned to a natural state (see Exhibit H, Section 2.5). No other uses of the site have been suggested.

7.0 AVAILABLE SOURCES AND EXTENT OF FINANCING

Puget Power expects to finance the Project as part of its ongoing construction financing program. No specific Project related financing is planned at this time.

Funds from operations, short-term borrowings from banks and the sale of commercial paper are used to provide working capital for the construction program. Short-term debt is repaid with the proceeds from the sale of longer-term securities.

The Company expects to fund a significant portion of its estimated construction expenditures with funds provided by operations, with the balance being funded through the sale of securities, the nature, amount and timing of which will be subject to market and other relevant factors.

ATTACHMENT D-1 (Sheet 1 of 7)
SNOQUALMIE FALLS
TOTAL PROJECT COSTS ($1000)

	Present Value in 1996	
Total Project Costs:		
Capital Costs (Existing Plant & Improvements)	$113,915	see "Improvements" (page 3)
Operating & Maintenance	$21,838	see "O&M" (page 5)
Continuing Capital Improvements	$8,970	see "Continuting Expenditures" (pages 6&7)
Total Project Cost	$144,724	
Levelized Project Cost (in Mills/KWH)	40.3 mills	

ATTACHMENT D-1 (Sheet 2 of 7)

Snoqualmie Falls
Assumptions

Annual Inflation Rate	5.0%
Levelized Fixed Charge Rate	13.99%
Discount Rate (WACC)	10.41%
Average Energy	381,338 MWH
Project Cost (in 1991 $), from Table D-1	$64,216
Project Cost (in 1996 $), from Table D-1	$81,958
O&M in mills (in 1991 $ not levelized)	2.5 mills
Revenue Sensitive Taxes - Rate	6.79%
Continuing Capital Improvements (in 1991 $)	$324

ATTACHMENT D-1 (Sheet 3 of 7)

Snoqualmie Falls
Improvements ($000)

	(in 1991 $)	(in 1996 $)	
Existing Plant Balance (in 1996)		$4,452	see "Existing Plant" (page 4)
Project Cost (in 1991 $)	$64,216		
Inflation rate (1991 to 1996)	27.63%	$81,958	
Total Investment in 1996		$86,410	
Levelized Fixed Charge Rate		13.99%	
Levelized Fixed Charge (LFC)		$12,089	

Period	Year	LFC	Present Value at 10.41%
1	1997	$12,089	$10,949
2	1998	$12,089	$9,917
3	1999	$12,089	$8,982
4	2000	$12,089	$8,135
5	2001	$12,089	$7,368
6	2002	$12,089	$6,673
7	2003	$12,089	$6,044
8	2004	$12,089	$5,474
9	2005	$12,089	$4,958
10	2006	$12,089	$4,491
11	2007	$12,089	$4,067
12	2008	$12,089	$3,684
13	2009	$12,089	$3,336
14	2010	$12,089	$3,022
15	2011	$12,089	$2,737
16	2012	$12,089	$2,479
17	2013	$12,089	$2,245
18	2014	$12,089	$2,033
19	2015	$12,089	$1,842
20	2016	$12,089	$1,668
21	2017	$12,089	$1,511
22	2018	$12,089	$1,368
23	2019	$12,089	$1,239
24	2020	$12,089	$1,122
25	2021	$12,089	$1,017
26	2022	$12,089	$921
27	2023	$12,089	$834
28	2024	$12,089	$755
29	2025	$12,089	$684
30	2026	$12,089	$620
31	2027	$12,089	$561
32	2028	$12,089	$508
33	2029	$12,089	$460
34	2030	$12,089	$417
35	2031	$12,089	$378
36	2032	$12,089	$342
37	2033	$12,089	$310
38	2034	$12,089	$281
39	2035	$12,089	$254
40	2036	$12,089	$230
Total		$483,550	$113,915

ATTACHMENT D-1 (Sheet 4 of 7)

Snoqualmie Falls
Existing Plant

BOOK COST:	1990	1991	1992	1993	1994	1995	1996
Snoqualmie Plant #1:							
Intangible	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48
Hydraulic Production							
Land	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77
Other	$3,491,454.18	$3,491,454.18	$3,491,454.18	$3,491,454.18	$3,491,454.18	$3,491,454.18	$3,491,454.18
Transmission	$434,457.05	$434,457.05	$434,457.05	$434,457.05	$434,457.05	$434,457.05	$434,457.05
Total	$3,998,265.48	$3,998,265.48	$3,998,265.48	$3,998,265.48	$3,998,265.48	$3,998,265.48	$3,998,265.48
Snoqualmie Plant #2:							
Intangible	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48	$41,094.48
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	$3,543,858.25	$3,543,858.25	$3,543,858.25	$3,543,858.25	$3,543,858.25	$3,543,858.25	$3,543,858.25
Transmission	$496,309.01	$496,309.01	$496,309.01	$496,309.01	$496,309.01	$496,309.01	$496,309.01
Total	$4,081,261.74	$4,081,261.74	$4,081,261.74	$4,081,261.74	$4,081,261.74	$4,081,261.74	$4,081,261.74
Project Total	$8,079,527.22	$8,079,527.22	$8,079,527.22	$8,079,527.22	$8,079,527.22	$8,079,527.22	$8,079,527.22
ACCUM. AMORT. & DEPR:							
Snoqualmie Plant #1:							
Intangible	$32,875.46	$35,615.18	$38,354.90	$41,094.48	$41,094.48	$41,094.48	$41,094.48
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	$1,026,699.65	$1,064,756.50	$1,102,813.35	$1,140,870.20	$1,178,927.05	$1,216,983.90	$1,255,040.75
Transmission	$245,377.07	$249,374.07	$253,371.08	$257,368.08	$261,365.09	$265,362.09	$269,359.10
Total	$1,304,952.18	$1,349,745.76	$1,394,539.33	$1,439,332.77	$1,481,386.62	$1,523,440.48	$1,565,494.33
Snoqualmie Plant #2:							
Intangible	$32,875.46	$35,615.18	$38,354.90	$41,094.48	$41,094.48	$41,094.48	$41,094.48
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	$1,171,812.04	$1,277,419.02	$1,383,025.99	$1,488,632.97	$1,594,239.94	$1,699,846.92	$1,805,453.90
Transmission	$149,946.00	$160,815.17	$171,684.33	$182,553.50	$193,422.67	$204,291.84	$215,161.00
Total	$1,354,633.50	$1,473,849.36	$1,593,065.23	$1,712,280.95	$1,828,757.09	$1,945,233.24	$2,061,709.38
Project Total	$2,659,585.68	$2,823,595.12	$2,987,604.56	$3,151,613.72	$3,310,143.71	$3,468,673.71	$3,627,203.71
NET BOOK VALUE:							
Snoqualmie Plant #1:							
Intangible	$8,219.02	$5,479.30	$2,739.58	$0.00	$0.00	$0.00	$0.00
Hydraulic Production							
Land	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77	$31,259.77
Other	$2,464,754.53	$2,426,697.68	$2,388,640.83	$2,350,583.98	$2,312,527.13	$2,274,470.28	$2,236,413.43
Transmission	$189,079.98	$185,082.98	$181,085.97	$177,088.97	$173,091.96	$169,094.96	$165,097.95
Total	$2,693,313.30	$2,648,519.72	$2,603,726.15	$2,558,932.71	$2,516,878.86	$2,474,825.00	$2,432,771.15
Snoqualmie Plant #2:							
Intangible	$8,219.02	$5,479.30	$2,739.58	$0.00	$0.00	$0.00	$0.00
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	$2,372,046.21	$2,266,439.23	$2,160,832.26	$2,055,225.28	$1,949,618.31	$1,844,011.33	$1,738,404.35
Transmission	$346,363.01	$335,493.84	$324,624.68	$313,755.51	$302,886.34	$292,017.17	$281,148.01
Total	$2,726,628.24	$2,607,412.38	$2,488,196.51	$2,368,980.79	$2,252,504.65	$2,136,028.50	$2,019,552.36
Project Total	$5,419,941.54	$5,255,932.10	$5,091,922.66	$4,927,913.50	$4,769,383.51	$4,610,853.51	$4,452,323.51 in thousands $4,452
ANNUAL AMORT OR DEPR:		Depr Rates					
Snoqualmie Plant #1:							
Intangible	$2,739.72	$2,739.72	$2,739.72	$2,739.58	$0.00	$0.00	$0.00
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	1.09%	$38,056.85	$38,056.85	$38,056.85	$38,056.85	$38,056.85	$38,056.85
Transmission	0.92%	$3,997.00	$3,997.00	$3,997.00	$3,997.00	$3,997.00	$3,997.00
Total		$44,793.58	$44,793.58	$44,793.44	$42,053.86	$42,053.86	$42,053.86
Snoqualmie Plant #2:							
Intangible	$2,739.72	$2,739.72	$2,739.72	$2,739.58	$0.00	$0.00	$0.00
Hydraulic Production							
Land	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Other	2.98%	$105,606.98	$105,606.98	$105,606.98	$105,606.98	$105,606.98	$105,606.98
Transmission	2.19%	$10,869.17	$10,869.17	$10,869.17	$10,869.17	$10,869.17	$10,869.17
Total		$119,215.86	$119,215.86	$119,215.72	$116,476.14	$116,476.14	$116,476.14

ATTACHMENT D-1 (Sheet 5 of 7)

Snoqualmie Falls
O&M ($000)

O&M in mills (in 1991 $)	2.5 mills
Inflation (1991 to 1996)	27.63%
O&M in mills (in 1996 $)	3.2 mills
Revenue Sensitive Taxes - Rate	6.79%
O&M in mills grossed up	3.4 mills
Annual Inflation Rate	5.00%

#	Year	Inflated Mills	Generation	Annual O&M	Present Value at 10.41%
1	1997	3.6 mills	381,338 MWH	$1,364	$1,236
2	1998	3.8 mills	381,338 MWH	$1,433	$1,175
3	1999	3.9 mills	381,338 MWH	$1,504	$1,118
4	2000	4.1 mills	381,338 MWH	$1,579	$1,063
5	2001	4.3 mills	381,338 MWH	$1,658	$1,011
6	2002	4.6 mills	381,338 MWH	$1,741	$961
7	2003	4.8 mills	381,338 MWH	$1,828	$914
8	2004	5.0 mills	381,338 MWH	$1,920	$869
9	2005	5.3 mills	381,338 MWH	$2,016	$827
10	2006	5.6 mills	381,338 MWH	$2,117	$786
11	2007	5.8 mills	381,338 MWH	$2,222	$748
12	2008	6.1 mills	381,338 MWH	$2,333	$711
13	2009	6.4 mills	381,338 MWH	$2,450	$676
14	2010	6.7 mills	381,338 MWH	$2,573	$643
15	2011	7.1 mills	381,338 MWH	$2,701	$612
16	2012	7.4 mills	381,338 MWH	$2,836	$582
17	2013	7.8 mills	381,338 MWH	$2,978	$553
18	2014	8.2 mills	381,338 MWH	$3,127	$526
19	2015	8.6 mills	381,338 MWH	$3,283	$500
20	2016	9.0 mills	381,338 MWH	$3,448	$476
21	2017	9.5 mills	381,338 MWH	$3,620	$452
22	2018	10.0 mills	381,338 MWH	$3,801	$430
23	2019	10.5 mills	381,338 MWH	$3,991	$409
24	2020	11.0 mills	381,338 MWH	$4,191	$389
25	2021	11.5 mills	381,338 MWH	$4,400	$370
26	2022	12.1 mills	381,338 MWH	$4,620	$352
27	2023	12.7 mills	381,338 MWH	$4,851	$335
28	2024	13.4 mills	381,338 MWH	$5,094	$318
29	2025	14.0 mills	381,338 MWH	$5,348	$303
30	2026	14.7 mills	381,338 MWH	$5,616	$288
31	2027	15.5 mills	381,338 MWH	$5,897	$274
32	2028	16.2 mills	381,338 MWH	$6,191	$260
33	2029	17.0 mills	381,338 MWH	$6,501	$248
34	2030	17.9 mills	381,338 MWH	$6,826	$235
35	2031	18.8 mills	381,338 MWH	$7,167	$224
36	2032	19.7 mills	381,338 MWH	$7,526	$213
37	2033	20.7 mills	381,338 MWH	$7,902	$202
38	2034	21.8 mills	381,338 MWH	$8,297	$193
39	2035	22.8 mills	381,338 MWH	$8,712	$183
40	2036	24.0 mills	381,338 MWH	$9,147	$174
Total					$21,838

oqualmie Falls
ntinuing Expenditures ($000)

ıount in 1991 $	$324
lation (91 to 96)	27.63%
ıount in 1996 $	$414
nual Inflation	5.00%

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
nual Expenditure Inflated		$434	$456	$479	$503	$528	$554	$582	$611	$641	$674	$707	$743	$780	$819	$860	$903	$948	$995	$1,045	$1,097	$1,152
/elized Fixed Charge Rate		13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%
1	1997	$61																				
2	1998	$61	$64																			
3	1999	$61	$64	$67																		
4	2000	$61	$64	$67	$70																	
5	2001	$61	$64	$67	$70	$74																
6	2002	$61	$64	$67	$70	$74	$78															
7	2003	$61	$64	$67	$70	$74	$78	$81														
8	2004	$61	$64	$67	$70	$74	$78	$81	$85													
9	2005	$61	$64	$67	$70	$74	$78	$81	$85	$90												
10	2006	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94											
11	2007	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99										
12	2008	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104									
13	2009	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109								
14	2010	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115							
15	2011	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120						
16	2012	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126					
17	2013	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133				
18	2014	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139			
19	2015	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146		
20	2016	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	
21	2017	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
22	2018	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
23	2019	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
24	2020	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
25	2021	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
26	2022	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
27	2023	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
28	2024	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
29	2025	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
30	2026	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
31	2027	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
32	2028	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
33	2029	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
34	2030	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
35	2031	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
36	2032	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
37	2033	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
38	2034	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
39	2035	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161
40	2036	$61	$64	$67	$70	$74	$78	$81	$85	$90	$94	$99	$104	$109	$115	$120	$126	$133	$139	$146	$153	$161

sent Value at 10.41%

qualmie Falls
itinuing Expenditures ($000)

ount in 1991 $	$324
ation (91 to 96)	27.63%
ount in 1996 $	$414
ual Inflation	5.00%

		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
ual Expenditure Inflated		$1,210	$1,270	$1,334	$1,400	$1,470	$1,544	$1,621	$1,702	$1,787	$1,877	$1,970	$2,069	$2,172	$2,281	$2,395	$2,515	$2,640	$2,773	$2,911	
elized Fixed Charge Rate		13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	Total
1	1997																				$61
2	1998																				$125
3	1999																				$191
4	2000																				$262
5	2001																				$336
6	2002																				$413
7	2003																				$495
8	2004																				$580
9	2005																				$670
10	2006																				$764
11	2007																				$863
12	2008																				$967
13	2009																				$1,076
14	2010																				$1,190
15	2011																				$1,311
16	2012																				$1,437
17	2013																				$1,570
18	2014																				$1,709
19	2015																				$1,855
20	2016																				$2,009
21	2017																				$2,170
22	2018	$169																			$2,339
23	2019	$169	$178																		$2,517
24	2020	$169	$178	$187																	$2,703
25	2021	$169	$178	$187	$196																$2,899
26	2022	$169	$178	$187	$196	$206															$3,105
27	2023	$169	$178	$187	$196	$206	$216														$3,321
28	2024	$169	$178	$187	$196	$206	$216	$227													$3,548
29	2025	$169	$178	$187	$196	$206	$216	$227	$238												$3,786
30	2026	$169	$178	$187	$196	$206	$216	$227	$238	$250											$4,036
31	2027	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263										$4,298
32	2028	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276									$4,574
33	2029	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289								$4,863
34	2030	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304							$5,167
35	2031	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319						$5,486
36	2032	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335					$5,821
37	2033	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352				$6,173
38	2034	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369			$6,543
39	2035	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369	$388		$6,931
40	2036	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369	$388	$407	$7,338
ent Value at 10.41%																					$8,970

ATTACHMENT D-2

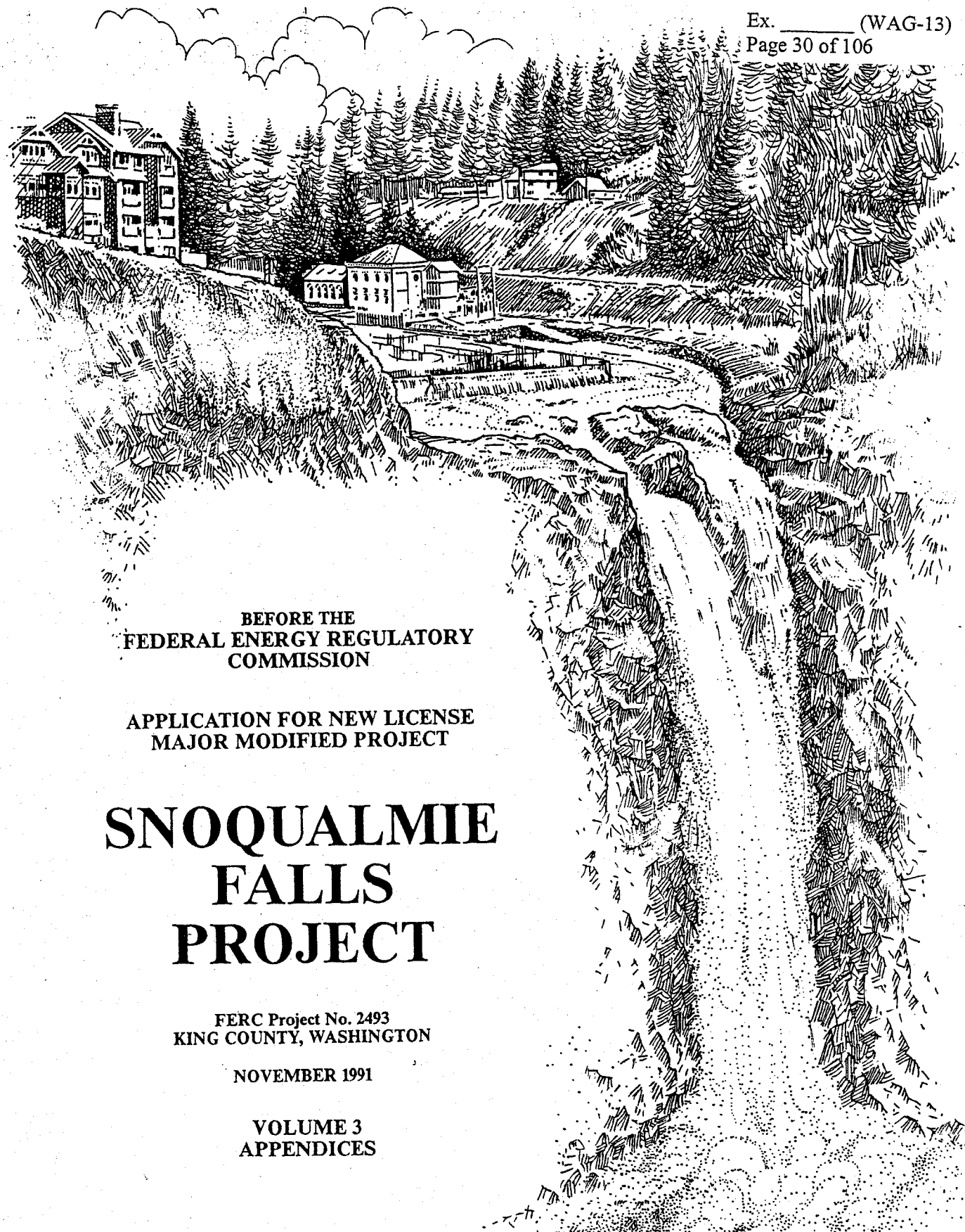
SNOQUALMIE FALLS HYDROELECTRIC PROJECT ADDITIONS

POWER COST ESTIMATE

10/30/91

snopower.wk1

ITEM		CONSTRUCTION COSTS ($1000'S) (INCLUDING CONTINGENCIES)
PLANT 2 INTAKE		$5,555
PLANT 2 POWERHOUSE		
Civil:		
.Structure (Incl. Tailrace)		$1,640
Mechanical:		
Turbine(s)/Gates		$8,280
Bypass Facility		$2,503
Miscellaneous Equip/Equip Relocation		$306
Electrical:		
Generator(s)		incl*
Switchgear		incl*
Accessory		$637
Substation		$720
TOTAL PLANT 2 POWERHOUSE		$14,086
PLANT 2 FLOWLINE		
Intake Shaft		$454
Tunnel		$3,457
Surge Shaft		$122
Surge Chamber		$418
Penstock		$3,476
TOTAL FLOWLINE		$7,927
SUBTOTAL DIRECT CONST COST		$27,568
Sales Tax	8.2%	$2,261
TOTAL DIRECT CONSTRUCTION COST		$29,829
INDIRECT COSTS		
Engineering @	15.0%	$4,474
Administrative @	5.0%	$1,491
SUBTOTAL (incl. direct costs)		$35,794
Puget Overhead @	4.5%	$1,611
SUBTOTAL (incl. direct costs)		$37,405
AFUDC @	10.0%	$3,741
TOTAL INDIRECT COSTS		$11,317
TOTAL CONSTRUCTION COST (1/91)		$41,146
TOTAL CONSTRUCTION COST (1/91)		$41,146
ESCALATION 1991 TO 1996 @ i=	5.0%	$52,513
NET ANNUAL CONST. COST		
1996 TO 2035 AT	13.99%	$7,347
AVERAGE ANNUAL ENERGY (MWHR)**		97,200
ENERGY COST		
1996 (mills/KWH)		76
O & M (mills/KWH)		9
TOTAL ENERGY COST		
1996 (mills/KWH)		



BEFORE THE
FEDERAL ENERGY REGULATORY
COMMISSION

APPLICATION FOR NEW LICENSE
MAJOR MODIFIED PROJECT

SNOQUALMIE FALLS PROJECT

FERC Project No. 2493
KING COUNTY, WASHINGTON

NOVEMBER 1991

VOLUME 3
APPENDICES

PUGET SOUND POWER & LIGHT COMPANY
BELLEVUE, WASHINGTON

APPENDIX 2

Avoided Cost Information

APPENDIX 2A

Puget Power's 1991 Avoided Cost Filing
with WUTC

PUGET SOUND POWER & LIGHT COMPANY
Forecast of Avoided Cost
May 1991

1. General

This document sets forth the forecast of avoided costs of Puget Sound Power & Light Company ("Puget" or the "Company"), as required by:

1. Regulations under the Public Utility Regulatory Policies Act ("PURPA", 18 CFR 292.302), and

2. The Commission's rules concerning "Purchases of Electricity from Qualifying Facilities and Independent Power Producers and Purchases of Electrical Savings from Conservation Suppliers" (Chapter 480-107 WAC).

Capitalized terms in this document shall have the same meaning as set forth in Chapter 480-107 WAC unless otherwise defined herein.

The assumptions and analyses used in the development of this forecast are consistent with Puget's least cost planning process. Puget has developed the avoided cost based upon the definition of "Avoided Costs" set forth in WAC 480-107-005 and information received through Puget's recent pilot competitive bid, the RFP for which was issued in June 1989. The mission of least cost planning is to develop a strategy for meeting forecast loads using demand- and supply-side resources that will have the lowest cost impact on Puget customers. The Company submitted its first Least Cost Plan to the Commission in November 1987 and its second plan in February 1990. The third plan is currently being developed for a scheduled submittal date in November 1991.

Section 2 below set forth Puget's forecast of avoided energy-only production costs over a five-year period. These are the rates which the Company expects to pay for energy supplied to the Company under Schedule 91 and any Short-run Prototype Contracts entered pursuant to WAC 480-107-010(2). Energy-only production costs are not directly addressed in the least cost planning process, which focuses on firm loads and resources.

Section 3 below describes the method used to determine the long-term costs of energy and capacity the utility would incur absent purchases from Qualifying Facilities, Independent Power Producers or Conservation Suppliers. These rates were developed considering the results of the Company's pilot competitive bid solicitation. As such, these rate shall apply to Qualifying Facilities of design capacity of one megawatt or less choosing to sell power under Prototype Contract B as defined in WAC 480-107-010(3)(b).

Table 2
Avoided Cost Schedule

	Firm Power			Secondary Energy	
Year	Winter Sep-Mar (mills/KWh)	Summer Apr-Aug (mills/KWh)	Capacity ($/KW-month)	Winter Sep-Mar (mills/KWh)	Summer Apr-Aug (mills/KWh)
1991	18.30	13.76	4.36	22.16	19.01
1992	20.59	15.61	4.79	22.95	20.20
1993	14.14	11.92	0.00	23.36	21.14
1994	15.58	13.50	0.00	25.09	23.01
1995	16.65	13.98	0.00	26.51	23.84
1996	35.43	27.73	7.40	28.05	25.19
1997	37.88	29.70	7.86	29.99	26.02
1998	40.57	31.86	8.37	31.20	26.71
1999	43.51	34.23	8.92	32.90	28.26
2000	46.73	36.82	9.52	34.16	29.67
2001	48.37	38.08	9.88	36.61	31.47
2002	50.15	39.46	10.27	42.26	32.57
2003	51.98	40.87	10.68	46.20	34.36
2004	53.91	42.36	11.10	49.66	36.19
2005	55.93	43.92	11.54	51.31	37.68
2006	58.05	45.55	12.01	54.94	39.55
2007	60.31	47.30	12.50	58.82	41.53
2008	62.74	49.18	13.04	61.76	43.60
2009	65.30	51.15	13.60	64.85	45.78
2010	67.98	53.22	14.18	68.09	48.07
2011	70.80	55.39	14.80	71.50	50.47
2012	73.76	57.68	15.45	75.07	53.00
2013	76.87	60.08	16.14	78.83	55.65
2014	80.21	62.66	16.87	82.77	58.43
2015	83.72	65.37	17.64	86.91	61.35
2016	87.27	68.11	18.42	91.25	64.42
2017	91.00	70.98	19.23	95.82	67.64
2018	94.92	74.01	20.09	100.61	71.02
2019	99.03	77.18	21.00	105.64	74.57
2020	103.34	80.51	21.94	110.92	78.30
2021	107.88	84.01	22.94	116.46	82.22
2022	112.63	87.68	23.98	122.29	86.33
2023	117.63	91.54	25.08	128.40	90.65
2024	122.88	95.58	26.23	134.82	95.18
2025	128.39	99.84	27.44	141.56	99.94
2026	134.18	104.31	28.71	148.64	104.93
2027	140.25	108.99	30.04	156.07	110.18
2028	146.63	113.91	31.44	163.88	115.69
2029	153.33	119.08	32.91	172.07	121.47
2030	160.36	124.51	34.45	180.68	127.54

Variable Firm Avoided Costs

1991 8.63 (mills/KWH)

Puget may accept levelized variations of the avoided cost forecast that offer higher front-end rates than would otherwise be available. In such cases, the project sponsor will be required to include adequate measures to mitigate the risk to Puget's customers of any higher amounts which, as a results of levelizing, are paid in the early years.

4. Planned Additions

Plant Name	Est. On-line Date	Plant Type	Capacity (MW)	Purchase Price ¢/KWh	Contract Term (yrs)
City of Spokane	8/91	MSW	23	22.9 \1	20
Dalles Fishway	7/91	Hydro	5	35.6 \1	20
Sumas Energy	12/91	Cogen	50	25.4 \1	20
March Pt. Cogen #1	10/91	Cogen	80	52.3 \1	20
Abacus	ramp	Cons	4	\2	Var.
Encogen N.W.	1/93	Cogen	160	\2	15
N.W. Cogen	ramp	Cons	1	\2	Var.
PESI	ramp	Cons	3	\2	Var.
Sycom	ramp	Cons	1	\2	Var.
Trans-Pac Geo.	7/93	Geo	10	\2	30
WSEO	ramp	Cons	1	\2	Var.
Wheelabrator Pierce	1/94	MSW	23	\2	20
March Pt. Cogen #2	1/93	Cogen	60	\3	19
Tenaska/Continental	10/93	Cogen	245	\3	17

Notes:

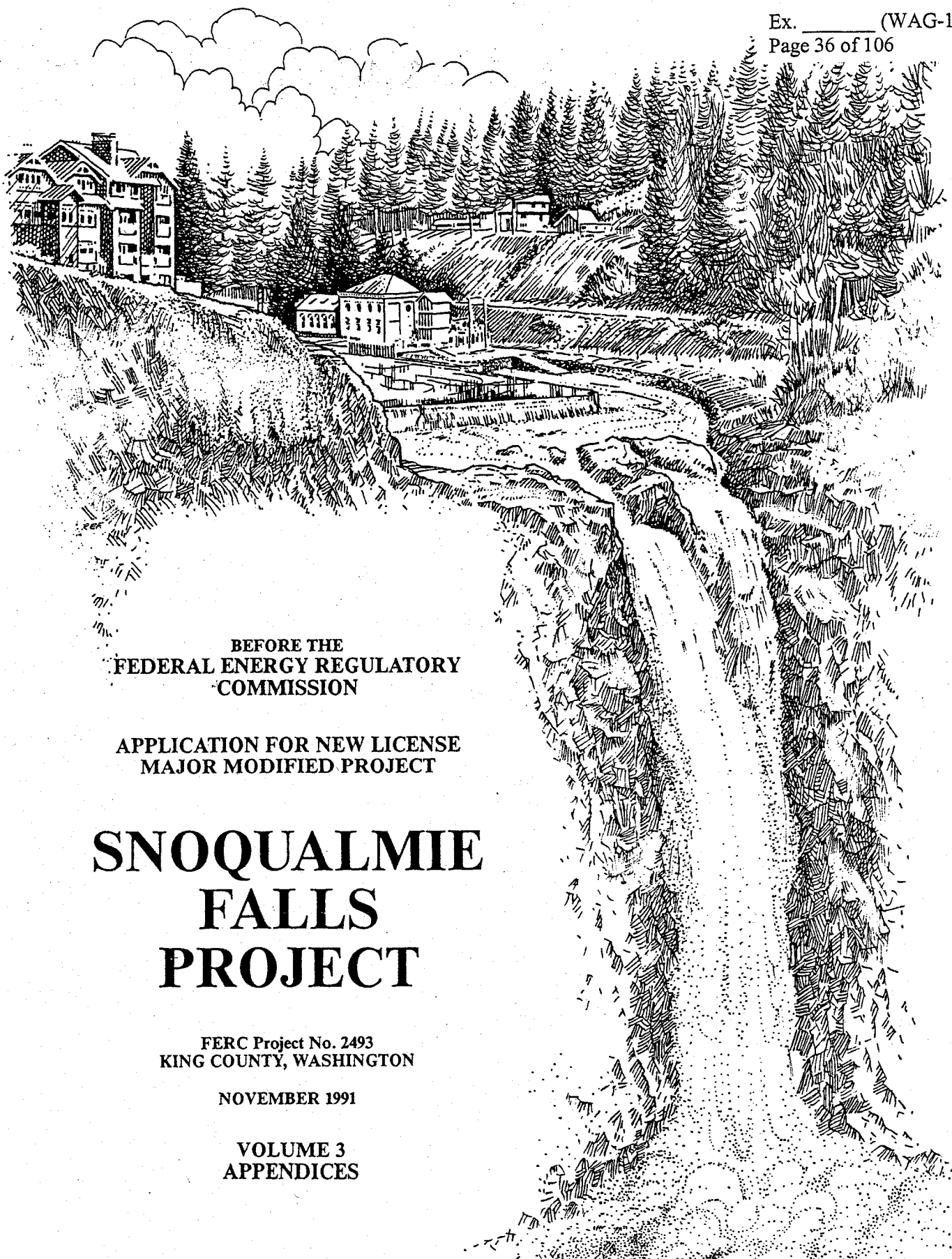
\1 Average forecast rate for first year of commercial operation. Future years determined by contract rate adjusted for inflation.

\2 The purchase rates for competitive bid resources are confidential to retain the integrity of the solicitation process. The rates payable under contracts signed through the pilot competitive bid range between 85% and 92.5% of Puget's 1989 avoided cost.

\3 The purchase rates for contracts signed after the pilot competitive bid are confidential. The rates payable under contracts signed after the pilot competitive bid are within the same range as a percentage of avoided cost as those signed during the bid.

In addition, Puget has requested to contract for the following amounts of power from BPA under the Power Sales Contract.

Period	Peak (MW)	Energy (Average MW)
1990-91	0	106
1991-92	0	86
1992-93	0	50
1993-94	0	50
1994-95	0	50
1995-96	0	50
1996-97	0	50



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BELLEVUE, WASHINGTON

APPENDIX 2B

Comparison Between Avoided Cost and Project Cost

APPENDIX 2B

COMPARISON BETWEEN AVOIDED COST AND PROJECT COST

This appendix contains the calculations of the replacement cost of power (the avoided cost) and the present value of the total project cost.

Attached are the following documents:

Avoided Cost of Project (3 pages)

Total Project Cost (7 pages)

Snoqualmie Falls Hydroelectric Project
Avoided Cost Evaluation of Upgraded Project

	Winter Firm Energy			Summer Firm Energy			Firm Capacity		
Year	Energy MWH	Avoided Cost mills	Value $000	Energy MWH	Avoided Cost mills	Value $000	Capacity MW-months	Avoided Cost $/KW-mons	Value $000
1997	144,652	48.5	$7,020	139,903	40.4	$5,645	391	7.86	$3,069
1998	144,652	51.7	$7,471	139,903	42.9	$6,007	391	8.37	$3,268
1999	144,652	55.1	$7,963	139,903	45.8	$6,403	391	8.92	$3,483
2000	144,652	58.8	$8,501	139,903	48.9	$6,836	391	9.52	$3,718
2001	144,652	61.0	$8,822	139,903	50.7	$7,093	391	9.88	$3,858
2002	144,652	63.4	$9,171	139,903	52.7	$7,374	391	10.27	$4,010
2003	144,652	65.9	$9,530	139,903	54.8	$7,662	391	10.68	$4,171
2004	144,652	68.5	$9,907	139,903	56.9	$7,966	391	11.10	$4,335
2005	144,652	71.2	$10,304	139,903	59.2	$8,285	391	11.54	$4,506
2006	144,652	74.1	$10,717	139,903	61.6	$8,617	391	12.01	$4,690
2007	144,652	77.2	$11,161	139,903	64.2	$8,975	391	12.50	$4,881
2008	144,652	80.5	$11,637	139,903	66.9	$9,358	391	13.04	$5,092
2009	144,652	83.9	$12,138	139,903	69.8	$9,760	391	13.60	$5,311
2010	144,652	87.5	$12,663	139,903	72.8	$10,182	391	14.18	$5,537
2011	144,652	91.4	$13,215	139,903	76.0	$10,626	391	14.80	$5,779
2012	144,652	95.4	$13,794	139,903	79.3	$11,092	391	15.45	$6,033
2013	144,652	99.6	$14,404	139,903	82.8	$11,583	391	16.14	$6,303
2014	144,652	104.1	$15,058	139,903	86.6	$12,109	391	16.87	$6,588
2015	144,652	108.9	$15,745	139,903	90.5	$12,661	391	17.64	$6,888
2016	144,652	113.7	$16,441	139,903	94.5	$13,221	391	18.42	$7,193
2017	144,652	118.7	$17,170	139,903	98.7	$13,806	391	19.23	$7,509
2018	144,652	124.0	$17,938	139,903	103.1	$14,424	391	20.09	$7,845
2019	144,652	129.6	$18,743	139,903	107.7	$15,070	391	21.00	$8,201
2020	144,652	135.4	$19,587	139,903	112.6	$15,750	391	21.94	$8,568
2021	144,652	141.6	$20,477	139,903	117.7	$16,465	391	22.94	$8,958
2022	144,652	148.0	$21,407	139,903	123.0	$17,214	391	23.98	$9,364
2023	144,652	154.8	$22,386	139,903	128.7	$18,001	391	25.08	$9,794
2024	144,652	161.9	$23,413	139,903	134.6	$18,825	391	26.23	$10,243
2025	144,652	169.3	$24,492	139,903	140.8	$19,694	391	27.44	$10,715
2026	144,652	177.2	$25,627	139,903	147.3	$20,606	391	28.71	$11,211
2027	144,652	185.4	$26,816	139,903	154.1	$21,562	391	30.04	$11,731
2028	144,652	194.0	$28,064	139,903	161.3	$22,565	391	31.44	$12,277
2029	144,652	203.1	$29,376	139,903	168.8	$23,620	391	32.91	$12,851
2030	144,652	212.6	$30,753	139,903	176.8	$24,728	391	34.45	$13,453
2031	144,652	222.6	$32,198	139,903	185.1	$25,890	391	36.07	$14,085
2032	144,652	233.1	$33,715	139,903	193.8	$27,110	391	37.77	$14,749
2033	144,652	244.1	$35,310	139,903	202.9	$28,392	391	39.55	$15,444
2034	144,652	255.7	$36,985	139,903	212.6	$29,739	391	41.43	$16,178
2035	144,652	267.8	$38,741	139,903	222.7	$31,151	391	43.40	$16,948
2036	144,652	280.6	$40,588	139,903	233.3	$32,635	391	45.46	$17,752

SNOQUALMIE FALLS

TOTAL PROJECT COSTS ($000)

	Present Value in 1996	
Total Project Costs:		
Capital Costs (Existing Plant & Improvements)	$113,915	see "Improvements" (page 3)
Operating & Maintenance	$21,838	see "O&M" (page 5)
Continuing Capital Improvements	$8,970	see "Continuing Expenditures" (pages 6&7)
Total Project Cost	$144,724	
Levelized Project Cost (in Mills/KWH)	40.3 mills	

Snoqualmie Falls
Improvements ($000)

	(in 1991 $)	(in 1996 $)	
Existing Plant Balance (in 1996)		$4,452	see "Existing Plant" (page 4)
Project Cost (in 1991 $)	$64,216		
Inflation rate (1991 to 1996)	27.63%	$81,958	
Total Investment in 1996		$86,410	
Levelized Fixed Charge Rate		13.99%	
Levelized Fixed Charge (LFC)		$12,089	

Period	Year	LFC	Present Value at 10.41%
1	1997	$12,089	$10,949
2	1998	$12,089	$9,917
3	1999	$12,089	$8,982
4	2000	$12,089	$8,135
5	2001	$12,089	$7,368
6	2002	$12,089	$6,673
7	2003	$12,089	$6,044
8	2004	$12,089	$5,474
9	2005	$12,089	$4,958
10	2006	$12,089	$4,491
11	2007	$12,089	$4,067
12	2008	$12,089	$3,684
13	2009	$12,089	$3,336
14	2010	$12,089	$3,022
15	2011	$12,089	$2,737
16	2012	$12,089	$2,479
17	2013	$12,089	$2,245
18	2014	$12,089	$2,033
19	2015	$12,089	$1,842
20	2016	$12,089	$1,668
21	2017	$12,089	$1,511
22	2018	$12,089	$1,368
23	2019	$12,089	$1,239
24	2020	$12,089	$1,122
25	2021	$12,089	$1,017
26	2022	$12,089	$921
27	2023	$12,089	$834
28	2024	$12,089	$755
29	2025	$12,089	$684
30	2026	$12,089	$620
31	2027	$12,089	$561
32	2028	$12,089	$508
33	2029	$12,089	$460
34	2030	$12,089	$417
35	2031	$12,089	$378
36	2032	$12,089	$342
37	2033	$12,089	$310
38	2034	$12,089	$281
39	2035	$12,089	$254
40	2036	$12,089	$230
Total		$483,550	$113,915

Snoqualmie Falls
O&M ($000)

O&M in mills (in 1991 $)	2.5 mills
Inflation (1991 to 1996)	27.63%
O&M in mills (in 1996 $)	3.2 mills
Revenue Sensitive Taxes - Rate	6.79%
O&M in mills grossed up	3.4 mills
Annual Inflation Rate	5.00%

#	Year	Inflated Mills	Generation	Annual O&M	Present Value at 10.41%
1	1997	3.6 mills	381,338 MWH	$1,364	$1,236
2	1998	3.8 mills	381,338 MWH	$1,433	$1,175
3	1999	3.9 mills	381,338 MWH	$1,504	$1,118
4	2000	4.1 mills	381,338 MWH	$1,579	$1,063
5	2001	4.3 mills	381,338 MWH	$1,658	$1,011
6	2002	4.6 mills	381,338 MWH	$1,741	$961
7	2003	4.8 mills	381,338 MWH	$1,828	$914
8	2004	5.0 mills	381,338 MWH	$1,920	$869
9	2005	5.3 mills	381,338 MWH	$2,016	$827
10	2006	5.6 mills	381,338 MWH	$2,117	$786
11	2007	5.8 mills	381,338 MWH	$2,222	$748
12	2008	6.1 mills	381,338 MWH	$2,333	$711
13	2009	6.4 mills	381,338 MWH	$2,450	$676
14	2010	6.7 mills	381,338 MWH	$2,573	$643
15	2011	7.1 mills	381,338 MWH	$2,701	$612
16	2012	7.4 mills	381,338 MWH	$2,836	$582
17	2013	7.8 mills	381,338 MWH	$2,978	$553
18	2014	8.2 mills	381,338 MWH	$3,127	$526
19	2015	8.6 mills	381,338 MWH	$3,283	$500
20	2016	9.0 mills	381,338 MWH	$3,448	$476
21	2017	9.5 mills	381,338 MWH	$3,620	$452
22	2018	10.0 mills	381,338 MWH	$3,801	$430
23	2019	10.5 mills	381,338 MWH	$3,991	$409
24	2020	11.0 mills	381,338 MWH	$4,191	$389
25	2021	11.5 mills	381,338 MWH	$4,400	$370
26	2022	12.1 mills	381,338 MWH	$4,620	$352
27	2023	12.7 mills	381,338 MWH	$4,851	$335
28	2024	13.4 mills	381,338 MWH	$5,094	$318
29	2025	14.0 mills	381,338 MWH	$5,348	$303
30	2026	14.7 mills	381,338 MWH	$5,616	$288
31	2027	15.5 mills	381,338 MWH	$5,897	$274
32	2028	16.2 mills	381,338 MWH	$6,191	$260
33	2029	17.0 mills	381,338 MWH	$6,501	$248
34	2030	17.9 mills	381,338 MWH	$6,826	$235
35	2031	18.8 mills	381,338 MWH	$7,167	$224
36	2032	19.7 mills	381,338 MWH	$7,526	$213
37	2033	20.7 mills	381,338 MWH	$7,902	$202
38	2034	21.8 mills	381,338 MWH	$8,297	$193
39	2035	22.8 mills	381,338 MWH	$8,712	$183
40	2036	24.0 mills	381,338 MWH	$9,147	$174
Total					$21,838

Snoqualmie Falls
Continuing Expenditures ($000)

Amount in 1991 $	$324
Inflation (91 to 96)	27.63%
Amount in 1996 $	$414
Annual Inflation	5.00%

		22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Annual Expenditure Inflated		$1,210	$1,270	$1,334	$1,400	$1,470	$1,544	$1,621	$1,702	$1,787	$1,877	$1,970	$2,069	$2,172	$2,281	$2,395	$2,515	$2,640	$2,773	$2,911	
Levelized Fixed Charge Rate		13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	13.99%	Total
1	1997																				$61
2	1998																				$125
3	1999																				$191
4	2000																				$262
5	2001																				$336
6	2002																				$413
7	2003																				$495
8	2004																				$580
9	2005																				$670
10	2006																				$764
11	2007																				$863
12	2008																				$967
13	2009																				$1,076
14	2010																				$1,190
15	2011																				$1,311
16	2012																				$1,437
17	2013																				$1,570
18	2014																				$1,709
19	2015																				$1,855
20	2016																				$2,009
21	2017																				$2,170
22	2018	$169																			$2,339
23	2019	$169	$178																		$2,517
24	2020	$169	$178	$187																	$2,703
25	2021	$169	$178	$187	$196																$2,899
26	2022	$169	$178	$187	$196	$206															$3,105
27	2023	$169	$178	$187	$196	$206	$216														$3,321
28	2024	$169	$178	$187	$196	$206	$216	$227													$3,548
29	2025	$169	$178	$187	$196	$206	$216	$227	$238												$3,786
30	2026	$169	$178	$187	$196	$206	$216	$227	$238	$250											$4,036
31	2027	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263										$4,298
32	2028	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276									$4,574
33	2029	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289								$4,863
34	2030	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304							$5,167
35	2031	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319						$5,486
36	2032	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335					$5,821
37	2033	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352				$6,173
38	2034	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369			$6,543
39	2035	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369	$388		$6,931
40	2036	$169	$178	$187	$196	$206	$216	$227	$238	$250	$263	$276	$289	$304	$319	$335	$352	$369	$388	$407	$7,338
Present Value at 10.41%																					$8,970

Snoqualmie Falls Relicensing

Document 2

Puget Power Response to Draft EIS

PUGET POWER

February 17, 1995

Ms. Lois D. Cashell
Secretary
Federal Energy Regulatory Commission
825 North Capitol Street N.E.
Washington, D.C. 20426

RE: **Puget Sound Power & Light Company's**
Comments on Draft Environmental Impact Statement
Snoqualmie Falls Hydroelectric Project
FERC/DEIS-0080D; FERC Project No. 2493

Dear Ms. Cashell:

Enclosed in the above-referenced proceeding are an original and eight copies of comments prepared by Puget Sound Power & Light Company ("Puget Power") on the Draft Environmental Impact Statement (DEIS) for the Snoqualmie Falls Hydroelectric Project.

On November 25, 1991, Puget Power filed an Application for License with the Federal Energy Regulatory Commission (FERC) which proposed expansion of the Snoqualmie Falls Project and provided supporting information which was relevant to the proposal at that time. Since the time of that filing, several factors have changed and new information has become available which has caused Puget Power to reevaluate the expansion of the Snoqualmie Falls Project, as proposed.

Based upon new information, as summarized in our comments, Puget Power believes that the FERC Staff-preferred Alternative as outlined in the DEIS is no longer feasible. Puget Power believes that the public interest would be best served by further analysis of the "Minor Upgrade Alternative" of the DEIS and the development of findings and recommendations in support of that action as a basis for a License.

If you have any questions or need further information regarding this filing, please contact Virginia Howell, Relicense Project Manager at (206) 462-3058.

Very truly yours,

Gary B. Swofford
Senior Vice President
Customer and Operations Services

cc: Service List

ATTACHMENT 1

ECONOMICS OF EXPANDED PROJECT

Original Cost Analysis

In the License Application, the present value capital cost of the Expanded Project was predicated upon certain project modifications. These modifications were intended to replace or refurbish existing equipment, install new generating facilities to increase capacity, and provide increased operational efficiency. Also proposed were improvements to non-power generating amenities on the site, including measures associated with fish and wildlife resources, flood reduction, and visitor and recreation facilities. The present value capital cost for the expanded project was also predicated upon what were then current economic assumptions. Inflation was predicted to be a uniform 5% annually; Puget Power's weighted average cost of capital was predicted to be 10.41%; operation and maintenance expenditures were estimated to be 2.5 Mils/KWH; continuing capital improvements were expected to cost $324,000 annually; and a levelizing factor to annualize project costs over a 40-year economic lifetime was calculated to be 13.99%. With the proposed improvements and economic assumptions, the present value capital cost was estimated by Puget Power to be $144,724,000. The Expanded Project would provide an average annual energy production of 381,338 MWH for a overall project cost of 40.3 Mils/KWH.

Revised Cost Analysis

Puget Power regularly reviews and reevaluates work scope and costs associated with a wide range of actual and proposed construction projects. This reevaluation is intended to verify the continuing efficacy and customer benefit of such projects in an evolving utility marketplace. A reevaluation of the proposed generating expansion at Snoqualmie Falls has now been completed, updating the economic factors to reflect current conditions and to quantify the detrimental effect on generation of higher instream flows than those originally proposed.

In the project reevaluation, inflation was not considered to be a flat rate of 5%, but rather was assumed to follow WEFA projections of 3.0% to 3.3% over the next 40 years. Puget Power's weighted average cost of capital was predicted to be 9.05%, operating and maintenance expenditures were unchanged at 2.5 Mils/KWH (but escalated at the lower inflation rate over the life of the project), continuing capital improvements were unchanged at $324,000 annually (but escalated at the lower inflation rate over the life of the project), and a levelizing factor to annualize project costs over its projected 40-year economic lifetime was calculated to be 12.21%. The revised economic assumptions reduce the present value capital cost to $130,749,596. With an average annual energy production of 381,338 MWH, the overall Expanded Project cost dropped to 32 Mils/KWH.

Instream Flows

The overall project costs stated above do not consider instream flow proposals other than that advanced by Puget Power in the License Application. Other flow proposals, which result in a greater volume of water bypassing the generation

equipment, will necessarily reduce the energy produced from an Expanded Project. For example, flow option "C" results in an 8 percent loss in electrical generation for the Expanded Project. Compared to Puget Power's flow proposal, annual electric energy production would drop to 353,300 MWH. The resultant decrease in generation increases the reevaluated overall melded project cost to 34.5 Mils/KWH.

Given the Company's lower avoided cost of power based on factors and influences stated elsewhere in this submittal, the Expanded Project is not judged economical for the Company to pursue. The current calculation of avoided cost is set forth in the table on the following page: Table I-1: Short Term Firm Rates (Mills/Kwh).

Table I-1: Short Term Firm Rates (Mills/Kwh)

Year	Escalation (%)	Winter (mills/kwh)	Summer (mills/kwh)
1994		27.65	17.61
1995		27.15	21.01
1996		25.37	19.79
1997		25.58	19.84
1998	2.50%	26.22	20.40
1999	2.50%	26.87	20.91
2000	2.50%	27.55	21.43
2001	2.50%	28.24	21.97
2002	2.50%	28.94	22.52
2003	2.50%	29.66	23.08
2004	2.50%	30.41	23.66
2005	2.50%	31.17	24.25
2006	2.50%	31.95	24.86
2007	2.50%	32.74	25.48
2008	2.50%	33.56	26.11
2009	2.50%	34.40	26.77
2010	2.50%	35.26	27.44
2011	2.50%	36.14	28.12
2012	2.50%	37.05	28.82
2013	2.50%	37.97	29.55
2014	2.50%	38.92	30.28
2015	2.50%	39.90	31.04
2016	2.50%	40.89	31.82
2017	2.50%	41.92	32.61
2018	2.50%	42.96	33.43
2019	2.50%	44.04	34.26
2020	2.50%	45.14	35.12
2021	2.50%	46.27	36.00
2022	2.50%	47.42	36.90
2023	2.50%	48.61	37.82
2024	2.50%	49.82	38.77
2025	2.50%	51.07	39.74
2026	2.50%	52.35	40.73
2027	2.50%	53.66	41.75
2028	2.50%	55.00	42.79
2029	2.50%	56.37	43.86
2030	2.50%	57.78	44.96

Snoqualmie Falls Relicensing

Document 3

Support Filed at FERC for Refurbishment Plan

PUGET POWER

June 28, 1995

Ms. Lois D. Cashell
Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Re: Snoqualmie Falls Project, FERC No. 2493

Dear Ms. Cashell:

By letter dated February 17, 1995, Puget Sound Power & Light Company ("Puget Power") submitted comments on the Draft Environmental Impact Statement for the Snoqualmie Falls Hydroelectric Project ("DEIS").[1] In the Comment Letter, Puget Power advised FERC:

> Based upon new information, as summarized in our comments, Puget Power believes that the FERC Staff-preferred Alternative as outlined in the DEIS is no longer feasible. Puget Power believes that the public interest would be best served by further analysis of the "Minor Upgrade Alternative" of the DEIS and the development of findings and recommendations in support of that action as a basis for a License.

Puget Power further stated:

> Therefore, Puget Power respectfully requests that FERC expand upon the analysis of the Minor Upgrade Alternative contained in the Draft Environmental Impact Statement (DEIS). An expanded analysis of this alternative will describe a Project that best serves the public interest. Such further analysis will support revised findings and recommendations, to be reflected in a License, for a Project that is best adapted to a comprehensive plan for development of the waterway for beneficial public uses.

---

[1]Letter from Gary B. Swofford to Lois D. Cashell (with attachments), dated February 17, 1995 (hereinafter "Comment Letter").

To this end, Puget Power stated:

> Puget Power's proposal to refurbish a 2,500 cfs project at Snoqualmie Falls is preliminary, may resemble the "Minor Upgrade Alternative" in some ways, and may differ from it in other ways. Puget Power is preparing a detailed project plan..... Puget Power anticipates that such a detailed plan would be available for FERC's review by October 1, 1995.

In the Comment Letter, we were careful to distinguish the "Minor Upgrade Alternative" from the "Refurbished Project." The distinction was to account for anticipated differences between what are otherwise substantially similar Project descriptions: one in the DEIS and one to be subsequently provided in greater detail by Puget Power. We were also careful in our comments to refer to the Staff-preferred alternative described at pages 6-46 through 6-51 of the DEIS as the "Expanded Project." These terms, with the same meanings, are also used in this submittal.

We now provide FERC with further information on the Refurbished Project. In an effort to provide the FERC with as much detail on the Refurbished Project as possible, some information already provided in the License Application and the DEIS has been repeated for purposes of context and clarity. The Refurbished Project is sufficiently similar to the Minor Upgrade Alternative for purposes of further analysis, the few notable differences being:

- Rather than the full range of flow alternatives considered in the DEIS, the Refurbished Project proposes instream flows that have been identified as potential conditions of a Water Quality Certification by the Washington State Department of Ecology ("Ecology") (See the Water Use and Quality section contained in this filing.).

- In consideration of public safety and fishery resources, the Refurbished Project carries forward a proposed flow continuation system.

- To improve removal of suspended sediments for Plant 2, the Refurbished Project includes minor expansion of the Plant 2 forebay.

- In consideration of historic preservation values, Unit 4 in Plant 1 will be left in place rather than removed from the cavity.

- The existing foot bridge (not addressed in the Minor Upgade Alternative) will be retained and refurbished.

Enclosed for filing are an original and eight copies of a package providing additional information on the Refurbished Project as set forth in the following attachments:

Engineering/Cost Information
- Project Description
- Project Operation and Control
- Project Development Schedule
- Estimated Cost of Refurbished Project

Special Information

Environmental Information
- Water Use and Quality
- Fish and Aquatic Resources
- Terrestrial Resources
- Cultural Resources
- Socioeconomic Impacts
- Geology and Soils
- Recreational Resources
- Aesthetic Resources
- Land Use

Under a separate filing by letter dated June 27, 1995, Puget Power has submitted five copies each of the following related technical reports to the FERC:

- Preliminary Design Criteria for the Refurbished Project
- Erosion and Sediment Control Information for the Refurbished Project
- Detailed Cost Information for the Refurbished Project

Puget Power will be happy to provide copies of these reports to those on the service list upon request.

If you have any questions regarding this filing, please contact Virginia Howell, Relicense Project Manager at (206) 462-3058.

Very truly yours,

Gary B. Swofford

Gary B. Swofford
Senior Vice President
Customer Operations

cc: Service List

ESTIMATED COSTS AND FINANCING FOR THE REFURBISHED PROJECT

Estimated Costs Of The Proposed Refurbishment

Land And Water Rights

There will be no significant expenditure for acquisition of land or water rights.

Direct Construction Costs

The construction cost (sub-total direct cost, 1995 dollars) for the Refurbished Project, including refurbishment, modifications and new facilities, is estimated to be $ 22,438,606. The direct construction cost includes 8.2% for applicable Washington State Sales Tax. This cost estimate is based on 1995 price levels and is summarized by FERC account in the following table:

Table 2. Direct Construction Cost Summary

FERC Acct. #	Description	Rates(%)	Amount ($)
	HYDRAULIC PRODUCTION PLANT		
331	Structures & Improvements		$1,179,950
332	Reservoirs, Dams, & Waterways		$7,343,055
332.2	Reservoirs, Dams, & Waterways - Recreation		$62,400
333	Waterwheels, Turbines, & Generators		$6,617,250
334	Accessory Electrical Equipment		$658,000
335	Miscellaneous Power Plant Equipment		$1,171,750
336	Roads & Bridges		$50,000
	TRANSMISSION PLANT		
353	Station Equipment		$450,000
	GENERAL PLANT		
397	Communications Equipment		$125,000
	Sub-Total Direct Costs (1995$)		$17,657,405
	Construction Contingency	20.0%	$1,728,271
	Equipment Contingency	15.0%	$1,352,407
	Sales Tax	8.2%	$1,700,523
	Sub-Total Direct Costs (1995$)		$22,438,606
	Engineering	10.0%	$2,243,861
	Administration	5.0%	$1,121,930
	Puget Overheads	10.0%	$2,580,440
	AFUDC	9.01%	$2,557,474
	Total Estimated Direct Construction Cost (1995$)		$30,942,311

Total Capital Cost: The total estimated direct construction cost for the construction is estimated to be $ 30,942,311 in 1995 dollars. The total capital cost includes the direct costs including Washington State Sales Tax, and indirect costs including engineering, administration, Puget Power overheads, and AFUDC. The total estimated direct construction cost escalated to 2003 dollars is $ 39,500,954.

Assuming a present day Operation and Maintenance cost of 3.2 mils/kWh, the present value of Operations and Maintenance over the projected 40-year operating life of the project is estimated to be $ 19,146,437 in 2003 dollars.

Assuming a present day continuing Capital Improvements cost of $ 220,000 per year, the present value of continuing Capital Improvements over the 40-year operating life of the project is estimated to be $ 5,522,916 in 2003 dollars.

The remaining book value of the existing project takes into account depreciation and routine capital improvements since the filing of the original License Application. The remaining book value for the project in 2003 dollars is $ 4,883,847.

The sum of the present value project cost estimate, present value Operations & Maintenance cost estimate, present value continuing improvements cost estimate, and existing book value equals the total present value project cost of $ 86,505,868 in 2003 dollars. This equates to a levelized power cost estimate for the entire project of approximately 26 mils/kWh in 2003 dollars. Puget Power's nominal levelized avoided cost is estimated to be 32 mils/kWh in 2003 dollars, based on a 20-year cost horizon for an equivalent amount of generation.

Contingencies: The contingencies for this project range from 15% to 20% of the direct construction cost. For the purposes of this submittal, the relative contingencies have been broken down into equipment contingencies at 15% and construction contingencies at 20%. These contingencies are included in the direct cost estimate as part of the total in the above direct cost table.

Indirect Construction Costs

Indirect construction costs included in the project cost estimate include 10% for engineering, 5% for administration, 10% for Puget Power overheads, and 9% for AFUDC.

Project Takeover Value

Fair Value

The value of the Snoqualmie Falls Generating Station to Puget Power is best evaluated in terms of the long-term costs to replace the electrical generation from the project and the book value of the facilities. Because much of the original cost of the existing project has long ago been depreciated, and because the project has low operation and maintenance costs, the cost to Puget Power is much lower than Puget Power's

alternatives for replacing the project.

The estimated present value of the cost of project power versus replacement power costs is shown below.

Replacement Power Cost	$ 111,740,441
Present Value Project Cost	$ 86,505,868

The replacement power cost estimate is based on the Puget Power's latest avoided cost estimate. Unlike the project cost estimates which are evaluated over a 40-year operating license, the avoided cost for project power was evaluated over a 20-year period and converted to present value in 2003 dollars. The 20-year avoided cost horizon is used to reflect the effect of wholesale power market competition. The replacement cost estimate is based on the average annual electrical energy production of 306,000 MWH from the proposed refurbished plant and the annual avoided cost projection based on a 20-year time horizon. The difference between the Replacement Power Cost and the Present Value Project Cost represents more than $25,000,000 in cost savings to ratepayers over the 40 year license term.

Net Investment

Puget Power's net investment in the existing project as of December 31, 1994 is as set forth in the following table:

Table 3. Net Investment in Snoqualmie Falls Existing Project

Balances as of 12-31-94	Book Cost	Accumulated Provision for Depreciation	Book Value
Plant 1			
Hydraulic Production			
Land	32,750.45	0.00	32,750.45
Other	4,017,756.06	(1,282,885.65)	2,734,870.41
Transmission	508,463.12	(263,650.07)	244,813.05
	4,558,969.63	(1,546,535.72)	3,012,433.91
Plant 2			
Hydraulic Production			
Land	0.00	0.00	0.00
Other	4,349,497.09	(1,489,699.44)	2,859,797.65
Transmission	495,266.21	(193,151.00)	302,115.21
	4,844,763.30	(1,682,850.44)	3,161,912.86
Total	9,403,732.93	(3,229,386.16)	6,174,346.77

Annual Costs

Construction is expected to occur between 1998 and 2002, with the cost of improvements entering ratebase in 2003.

The capital investment is expected to be financed according to Puget Power capital structure and cost rates as shown in the following table:

Table 4. Puget Power Capital Structure and Cost Rates

Capital Type	Capital Structure	Marginal Cost	Weighted Forecast Cost Rate
Short-Term Debt	2.4%	6.80%	0.16%
Long-Term Debt	41.2%	8.08%	3.33%
Preferred Equity	8.4%	8.24%	0.69%
Common Equity	48.0%	11.20%	5.38%
Estimated Cost of Capital	100.0%		9.56%

A levelized fixed charge rate of 13.35% is used to calculate the annual cost of the proposed refurbishment capital investment.

The average annual cost of power is calculated by determining the levelized annual cost of the capital investment and then dividing by the project generation. The levelized annual cost for the Refurbished Project is 26 mils/kWh in 2003 dollars. This cost includes depreciation, State and Federal taxes, Operating and Maintenance expenses, existing project book value, and the capital costs of the improvements. It also takes into account the reduced generation resulting from the proposed instream flows as described in "Water Use and Quality."

Snoqualmie Falls Relicensing

Document 3

Support Filed at FERC for Refurbishment Plan

PUGET POWER

June 28, 1995

Ms. Lois D. Cashell
Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Re: Snoqualmie Falls Project, FERC No. 2493
Supporting Technical Information

Dear Ms. Cashell:

Enclosed for filing are five copies of a technical information package regarding the Snoqualmie Falls Project Relicense. This information is filed in conjunction with a June 29, 1995 filing by Mr. Gary B. Swofford of Puget Sound Power & Light Company that provided information for FERC's further environmental analysis of the Minor Upgrade Alternative.

The enclosed technical reports are entitled as follows:

Preliminary Design Criteria for the Refurbished Project

Erosion & Sediment Control for the Refurbished Project

Detailed Cost Information for the Refurbished Project

If you have questions or would like further information, please call me at (206) 462-3058.

Sincerely,

Virginia A. Howell

Virginia A. Howell, Project Manager
Snoqualmie Falls Project Relicense

Environmental Department, P.O. Box 97034 OBC 11N, 411 108th Avenue NE, Bellevue, WA 98009-9734

Detailed Cost Information for the Refurbished Project

Snoqualmie Falls Project Relicense FERC Project No. 2493

June 28, 1995

Puget Sound Power & Light Company

Snoqualmie Falls Refurbished Project
Direct Construction Cost Summary

FERC Acct. #	Description	Rates (%)	Amount ($)	
	HYDRAULIC PRODUCTION PLANT			
331	Structures & Improvements		$1,179,950	
332	Reservoirs, Dams, & Waterways		$7,343,055	
332.2	Reservoirs, Dams, & Waterways - Recreation		$62,400	
333	Waterwheels, Turbines, & Generators		$6,617,250	
334	Accessory Electrical Equipment		$658,000	
335	Miscellaneous Power Plant Equipment		$1,171,750	
336	Roads & Bridges		$50,000	
	TRANSMISSION PLANT			
353	Station Equipment		$450,000	
	GENERAL PLANT			
397	Communications Equipment		$125,000	
	Sub-Total Direct Costs (1995$)		$17,657,405	
	Construction Contingency	20.0%	$1,728,271	
	Equipment Contingency	15.0%	$1,352,407	
	Sales Tax	8.2%	$1,700,523	
	Sub-Total Direct Costs (1995$)		$22,438,606	
	Engineering	10.0%	$2,243,861	
	Administration	5.0%	$1,121,930	
	Puget Overheads	10.0%	$2,580,440	
	AFUDC	9.01%	$2,557,474	
	Total Estimated Direct Construction Cost (1995$)		$30,942,311	13.50 $/MWH
	Inflation from 1995$ to 2003$	27.66%	$8,558,643	
	Total Estimated Direct Construction Cost (2003$)		$39,500,954	

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Seismic Retrofit	1	LS	125000	$125,000	
Misc Concrete Repair	1	LS	15000	$15,000	
Public Restroom Facilities	1	LS	60000	$60,000	
Improvements to Existing Shelter	1	LS	15000	$15,000	
					CIVIL
					$215,000
ELECTRICAL WORK					
Primary Station Service Transformer	1	LS	35000	$35,000	
Reserve Station Service Transformer	1	LS	25000	$25,000	MECHANICAL
					$60,000
SUBTOTAL PLANT 2 IMPROVEMENTS					$275,000
HISTORIC STRUCTURE IMPROVEMENTS					
CIVIL WORK					
Stabilize Building - Transformer House	1	LS	465000	$465,000	
Seismic Upgrade - Transformer House				included	
Stabilize Building - Machine Shop	1	LS	374000	$374,000	
Seismic Upgrade - Machine Shop				included	
					CIVIL
					$839,000
MECHANICAL WORK					
Miscellaneous Improvements	1	LS	15000	$15,000	
					MECHANICAL
					$15,000
ELECTRICAL WORK					
Miscellaneous Improvements	1.00	LS	30000	$30,000	ELECTRICAL
					$30,000
SUBTOTALHISTORIC STRUCTURES					$884,000
TRAIL IMPROVEMENTS					
CIVIL WORK					
Regrade Existing Trail to Plant 2	2,500	LF	3	$7,500	
Clearing and Grubbing	0	AC	8000	$800	
Ditch Excavation	10	CY	15	$150	
Miscellaneous Improvements	1	LS	2500	$2,500	CIVIL
					$10,950
MECHANICAL WORK					
Interpretive Signs/Exhibits	1	LS	5000	$5,000	
Handrails	1	LS	5000	$5,000	MECHANICAL
					$10,000
SUBTOTAL TRAIL IMPROVEMENTS					$20,950
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,179,950

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Mobilization	1	LS	200000	$200,000	
Stage 1 Cofferdam	1	LS	25000	$25,000	
Stage 2 Cofferdam	1	LS	55000	$55,000	
Stage 3 Cofferdam	1	LS	55000	$55,000	
Access Improvements	1	LS	25000	$25,000	
Bore 36-inch sluiceway in dam	1	LS	36000	$36,000	
Sluiceway Concrete	45	YD	400	$18,000	
Main Dam					
Replacement Timbers	55	MBF	1600	$88,000	
Mass Concrete	220	CY	200	$44,000	
Structural Concrete	170	CY	400	$68,000	
Anchors	1400	LF	30	$42,000	
Rebar	42000	LB	0.75	$31,500	
Side Channel Spillway					
Common Excavation	4100	CY	10	$41,000	
Rock Excavation	1340	CY	50	$67,000	
Mass Concrete	180	CY	200	$36,000	
Structural Concrete	60	CY	400	$24,000	
Anchors	1500	LF	30	$45,000	
Rebar	18000	LB	0.75	$13,500	
Lean Concrete Fill	10	CY	100	$1,000	
Gabion Wall	180	LF	150	$27,000	
Backfill	900	CY	5	$4,500	
Control House					
Mass Concrete	25	CY	200	$5,000	
Structural Concrete	90	CY	400	$36,000	
Rebar	16000	LB	0.75	$12,000	CIVIL
					$999,500
MECHANICAL WORK					
Piping & Conduit	1	LS	20000	$20,000	
Miscellaneous Metals	1	LS	20000	$20,000	
Sluiceway stoplogs	1	LS	1500	$1,500	
42-inch sluice gate	1	LS	18000	$18,000	
Rubber Dam					
Main Dam	1	LS	275000	$275,000	
Right Bank Dam	1	LS	145000	$145,000	
Side Spillway Dam	1	LS	165000	$165,000	
Controls	1	LS	50000	$50,000	
Installation	1	LS	35000	$35,000	
Control House					

Miscellaneous Metals	1	LS	10000	$10,000	
Mechanical	1	LS	7000	$7,000	MECHANICAL
					$746,500
ELECTRICAL					
Electrical	1	LS	55000	$55,000	
Site Electrical	1	LS	21000	$21,000	ELECTRICAL
					$76,000
DEMOLITION					
Main Dam					
Timber Crest Removal	1	LS	8000	$8,000	
Concrete Demolition	210	CY	90	$18,900	
Side Channel Spillway					
Timber Wall Removal	1	LS	3000	$3,000	
Concrete Demolition	75	CY	60	$4,500	DEMOLITION
					$34,400
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,856,400

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 332
RESERVOIRS, DAMS & WATERWAYS
PLANT 1 TAILRACE

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Mobilization	1	LS	5000	$5,000	
Care of Water	1	LS	2000	$2,000	
Rock Excavation	80	CY	300	$24,000	
Backfill	1	LS	10000	$10,000	
Concrete Downstream Flow Control	1	LS	10000	$10,000	CIVIL
					$51,000
MECHANICAL WORK					
Piping	50	LF	160	$8,000	
Plug Valve	0	LS	5000	$0	MECHANICAL
					$8,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$59,000

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Backfill	790	CY	10	$7,900	
Cofferdam	1	LS	33000	$33,000	
Coarse debris barrier					
Removal and Disposal	50	LF	60	$3,000	
Concrete	1	LS	45000	$45,000	
Rehab existing concrete	1	LS	34000	$34,000	
Headwall, Deck and Supports	250	CY	400	$100,000	
Pier	80	CY	400	$32,000	
Sediment Exclusion Wall	42	CY	400	$16,800	
	65	CY	300	$19,500	
MECHANICAL WORK					$291,200
Rake/Crane (incl. power and controls)					
Stoplogs	1	LS	82000	$82,000	
Miscellaneous Metals	1	LS	32000	$32,000	
Refurbish Existing Trashracks	1	LS	8000	$8,000	
New 8' x 10' Headgates	1	LS	15000	$15,000	
(Price & Installation)	2	LS	110000	$220,000	
					MECHANICAL
ELECTRICAL WORK					$357,000
	1	LS	75000	$75,000	ELECTRICAL
DEMOLITION					$75,000
					DEMOLITION
Remove Trashrack, Intake Gate & Full Debris Rack	1	LS	5000	$5,000	$5,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$728,200

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Concrete Headwall Replacement	110	CY	425	$46,750	
Submerged sediment wall	50	CY	425	$21,250	CIVIL
					$68,000
MECHANICAL WORK					
8' Diameter Penstock	190,000	LB	1.5	$285,000	
6' Diameter Penstock	150,000	LB	1.5	$225,000	
72 - Inch Butterfly Valve	1	EA	70000	$70,000	
54 - Inch Butterfly Valve	1	EA	65000	$65,000	
Penstock Supports	12	EA	5000	$60,000	
Penstock Installation	630	FT	400	$252,000	MECHANICAL
					$957,000
DEMOLITION					
Penstock Removal/Disposal (incl. salvage value)	1	LS	15000	$15,000	
Concrete Headwall Removal	1	LS	10000	$10,000	DEMOLITION
					$25,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,050,000

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Sections 3 and 4 Rock Excavation	8,000	CY	50	$400,000	
Rock Disposal	7,500	CY	12	$90,000	
Concrete					
Headwall	55	CY	400	$22,000	
Sediment exclusion wall	90	LS	300	$27,000	
Miscellaneous Repairs	1	LS	36000	$36,000	CIVIL
					$575,000
MECHANICAL WORK					
New Intake Gates and Operators	1	LS	140000	$140,000	
Refurbish Existing Operators and Mechanisms	1	LS	50000	$50,000	
Stoplog Refurbishment	1	LS	25000	$25,000	
Miscellaneous Metals	1	LS	35000	$35,000	
Replace Debris Rack	12,000	LB	3	$36,000	
Disposal existing rack, trough, gates	1	LS	25000	$25,000	
Trashraking System	1	LS	95000	$95,000	
Refurbish Existing Trashrack	1	LS	10000	$10,000	MECHANICAL
					$276,000
ELECTRICAL WORK					
Miscellaneous Electrical	1	LS	75000	$75,000	
Deicing System	1	LS	15000	$15,000	
					ELECTRICAL
					$75,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$926,000

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
New Concrete for Thrust Blocks and Saddles	450	CY	350	$157,500	
Thrust Block and Saddle Anchors	1	LS	75000	$75,000	
Piping Restraint	1	LS	15000	$15,000	
Temporary Penstock Support	1	LS	25000	$25,000	
Mobilization	1	LS	25000	$25,000	CIVIL
					$297,500
MECHANICAL WORK					
Penstock Expansion Joints	3	EA	1100	$3,300	
Penstock Lining	13,200	SF	6.15	$81,180	
Penstock Coating	13,500	SF	4	$54,000	
					MECHANICAL
					$138,480
DEMOLITION					
Thrust Blocks and Saddles	1	LS	7500	$7,500	DEMOLITION
					$7,500
SUBTOTAL DIRECT CONSTRUCTION COSTS					$443,480

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
New Concrete for Thrust Blocks	415	CY	250	$103,750	CIVIL
					$103,750
MECHANICAL WORK					
Penstock Coating	19,200	SF	4	$76,800	
Ring Girders	4	EA	6000	$24,000	
Penstock Expansion Joints	2	EA	3400	$6,800	
120-inch Butterfly Valve	1	EA	100000	$100,000	
10' x 8' Fabricated Bifurcation	50,000	LB	4	$200,000	MECHANICAL
					$407,600
DEMOLITION					
Pipe and Disposal	1	LS	2500	$2,500	
Thrust Blocks	1	LS	2500	$2,500	DEMOLITION
					$5,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$516,350

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Common Excavation	28,200	CY	10	$282,000	
Backfill	26,320	CY	5	$131,600	
Concrete - Bypass Chamber	750	CY	400	$300,000	
Concrete - Butterfly Valve Vault	20	CY	300	$6,000	
Rock Stabilization	1	LS	10000	$10,000	
Stoplogs and Guides	1	LS	60000	$60,000	
Cofferdam and Dewatering	1	LS	50000	$50,000	CIVIL
					$839,600
MECHANICAL WORK					
Steel Liner	1	LS	100000	$100,000	
Penstock	30,000	LB	1.5	$45,000	
Fixed Cone Valve, 54" Diameter	1	LS	175000	$175,000	
Hydraulic Power Unit	1	LS	45000	$45,000	
8' Diameter Butterfly Valve	1	LS	75000	$75,000	
Miscellaneous Metals	1	LS	5000	$5,000	MECHANICAL
					$445,000
ELECTRICAL WORK					
Controls	1	LS	20000	$20,000	ELECTRICAL
					$20,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,304,600

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Forebay					
Excavation (Rock)	650	YD	50	$32,500	
Concrete	10	CY	400	$4,000	
18-inch sediment ejector hole	90	LF	1000	$90,000	
Gate House					
Seismic Retrofit	1	LS	100000	$100,000	
Concrete (Plain)	25	CY	250	$6,250	
Concrete (Reinforced)	15	CY	425	$6,375	
Architectural Features	1	LS	50000	$50,000	
Fencing	700	LF	12	$8,400	CIVIL
					$297,525
MECHANICAL WORK					
Forebay					
Access Doors	4	EA	2500	$10,000	
Steel Guide for Future Stoplogs	1	LS	5000	$5,000	
Miscellaneous metal	1	LS	8000	$8,000	
Gatehouse					
24-inch sluice gate w/operator	1	LS	6500	$6,500	
Replace Headgates	1	LS	50000	$50,000	
Bar Screen	1	LS	40000	$40,000	MECHANICAL
					$119,500
ELECTRICAL					
New Controls and Actuators	3	EA	25000	$75,000	
Gatehouse (Power, Lights, Etc.)	1	LS	50000	$50,000	ELECTRICAL
					$50,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$467,025

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
MECHANICAL WORK					
Black Vinyl Fencing	4,500	LF	12	$54,000	
Wood Framed Fencing	600	LF	14	$8,400	MECHANICAL
					$62,400
SUBTOTAL DIRECT CONSTRUCTION COSTS					$62,400

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
MECHANICAL WORK					
Unit 1 Turbine Runner,Gates, Etc.	1	LS	675000	$675,000	
Generator Rewind	1	LS	750000	$750,000	
Installation	1	LS	125000	$125,000	MECHANICAL
					$1,425,000
ELECTRICAL WORK					
Control (Breaker)	1	LS	25000	$25,000	ELECTRICAL
Flow Monitoring Equipment	1	LS	35000	$35,000	$60,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,485,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 333
TURBINE, GENERATOR & CONTROLS
PLANT 2 UNIT 2-UPGRADE

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
MECHANICAL WORK					
Unit 2 Turbine Runner, Seals, Etc.	1	LS	225000	$225,000	
Governor Replacement	1	LS	45000	$45,000	MECHANICAL
					$270,000
ELECTRICAL WORK					
Control Upgrades (Both Units)	1	LS	150000	$150,000	ELECTRICAL
					$150,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$420,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 333
WATER WHEELS, TURBINES & GENERATORS
P1 U1 TURBINE & GENER.

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
MECHANICAL WORK					
Turbine, Generator, Governor, Exciter	1	LS	1,800,000	$1,800,000	
Cooling System				included	
Lube System				included	
Meters, Gages, Etc.				included	
Scroll Case Fill-Drain System				included	
Pressure-Regulator System				included	
Installation	1	LS	150000	$150,000	MECHANICAL
					$1,950,000
ELECTRICAL WORK					
Controls, Instrumentation	1	LS	225,000	$225,000	ELECTRICAL
Flow Monitoring Equipment	1	LS	55,000	$55,000	
					$280,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$2,230,000

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
MECHANICAL WORK					
Turbine, Generator, Governor, Exciter	1	LS	1500000	$1,500,000	
Cooling System				included	
Lube System				included	
Meters, Gages, Etc.				included	
Scroll Case Fill-Drain System				included	
Pressure-Regulator System				included	
Installation	1	LS	150000	$150,000	MECHANICAL
					$1,650,000
ELECTRICAL WORK					
Controls, Instrumentation	1	LS	325000	$325,000	ELECTRICAL
Flow Monitoring Equipment	1	LS	55000	$55,000	
					$380,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$2,030,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 333
WATER WHEELS, TURBINES & GENERATORS
P-1 SUPPORT P-HOUSE IMPR.

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
Rock Excavation	50	CY	150	$7,500	
Concrete Removal	350	CY	30	$10,500	
Foundations and Settings-Unit 1 and 2					
Concrete Substructure, 1st Stage	750	CY	400	$300,000	
Concrete, 2nd Stage	225	CY	250	$56,250	CIVIL
					$374,250
MECHANICAL WORK					
Miscellaneous Metals	1	LS	3000	$3,000	MECHANICAL
					$3,000
ELECTRICAL WORK					
Miscellaneous Improvements	1	LS	10000	$10,000	ELECTRICAL
					$10,000
DEMOLITION					
Unit 5 Turbine Removal/Disposal	1	LS	15000	$15,000	
Unit 1-3 Generator Removal/Disposal	1	LS	25000	$25,000	
Electric Cables Removal/Disposal	1	LS	25000	$25,000	DEMOLITION
					$65,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$452,250

SNOQUALMIE FALLS HYDROLECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 334
PLANT 1 ACCESSORY ELECTRIC EQUIPMENT

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
ELECTRICAL WORK					
Excitation System					
Static Excitation	2	EA	55000	$110,000	
Excitation Accessories	1	LS	35000	$35,000	
Generator Main Connections					
Generator Breaker	2	EA	35000	$70,000	
Protective Relaying	1	LS	25000	$25,000	
CT's and PT's	1	LS	30000	$30,000	
Main Connection Accessories	1	LS	15000	$15,000	
Main Cable	800	LF	105	$84,000	
Storage Batteries	1	LS	8000	$8,000	
Station Service Equipment					
Station Service Transformers	2	EA	22000	$44,000	
Automatic Transfer Switch	1	EA	9500	$9,500	
Motor Control Center	1	LS	25000	$25,000	
Station Service Accessories	1	LS	10000	$10,000	
Station Control System					
Switchboard Control Panels	2	EA	35000	$70,000	
Plant Controllers	1	LS	65000	$65,000	
Metering	1	LS	6000	$6,000	
UPS	1	LS	6500	$6,500	
Supervisory Control Equipment	1	LS	45000	$45,000	ELECTRICAL
					$658,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$658,000

HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
CIVIL WORK					
New Elevator Building	1	LS	65000	$65,000	CIVIL
Concrete Elevator Shaft	600	YD	425	$255,000	
	0	LS	0	$0	
					$320,000
MECHANICAL WORK					
Elevator Remove/Replace	1	LS	250000	$250,000	MECHANICAL
					$250,000
ELECTRICAL WORK					
Generator Bus Duct - 7,200 volt	975	LF	450	$438,750	ELECTRICAL
Control Cable and Conduits , < 600 volt	1,680	LF	37.5	$63,000	
					$501,750
SUBTOTAL DIRECT CONSTRUCTION COSTS					$1,071,750

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 335
MISCELLANEOUS POWER PLANT EQUIPMENT
POWERHOUSE 1 EQUIPMENT RELOCATION

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
ELECTRICAL WORK					
Disconnect Impulse Turbines	1	LS	100000	$100,000	ELECTRICAL
					$100,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$100,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 336
ACCESS ROADS

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
ELECTRICAL WORK					
General Road Improvements	1	LS	50000	$50,000	ELECTRICAL
					$50,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$50,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 353
SUBSTATION EQUIPMENT

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
ELECTRICAL WORK					
Plant 1 Step Up Transformer	1	EA	450000	$450,000	ELECTRICAL
					$450,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$450,000

SNOQUALMIE FALLS HYDROELECTRIC PROJECT
ESTIMATED CONSTRUCTION COSTS
FERC ACCOUNT NO. 397
COMMUNICATION EQUIPMENT

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HDR ENGINEERING, INC.					
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL	SUBTOTALS
DIRECT CONSTRUCTION COSTS					
ELECTRICAL WORK					
Communication Equipment	1	LS	125000	$125,000	ELECTRICAL
					$125,000
SUBTOTAL DIRECT CONSTRUCTION COSTS					$125,000

Snoqualmie Falls Refurbished Project
Economic Assumptions

Annual Inflation Rate	3.10%
Levelized Fixed Charge Rate	13.35%
Capital Recovery Factor	9.31%
Federal Tax Rate	35.00%
Construction Period Interest Rates	7.84%
AFUDC Rate	9.01%
Equipment Escalation Factor	3.00%
Structure Cost Escalation Factor	2.90%
Labor Cost Escalation Factor	4.10%
Non-Labor Cost Escalation Factor	3.00%
Revenue Sensitive Taxes	6.36%
Insurance Rate	0.05%
Property Tax Rate	1.41%
Energy Cost Rates	See Avoided Cost Table
Puget Power Overhead Rate	10.00%

Snoqualmie Falls Refurbished Project Improvements

Project Cost (In 1995$)	$30,942,311
Capital Recovery Factor	9.31%
Annual Inflation Rate	3.10%
Inflation Rate from 1995 to 2003	27.66%
Project Cost in 2003$	$39,500,954
Existing Plant Balance (in 2003$)	$4,883,847
Total Investment in 2003$	$44,384,801
Levelized Fixed Charge Rate	13.35%
Levelized Fixed Charge	$5,925,371

Period	Year	LFC ($)	Present Value ($)
1	2003	$5,925,371	$5,420,703
2	2004	$5,925,371	$4,959,019
3	2005	$5,925,371	$4,536,656
4	2006	$5,925,371	$4,150,266
5	2007	$5,925,371	$3,796,786
6	2008	$5,925,371	$3,473,411
7	2009	$5,925,371	$3,177,578
8	2010	$5,925,371	$2,906,942
9	2011	$5,925,371	$2,659,356
10	2012	$5,925,371	$2,432,857
11	2013	$5,925,371	$2,225,649
12	2014	$5,925,371	$2,036,089
13	2015	$5,925,371	$1,862,674
14	2016	$5,925,371	$1,704,029
15	2017	$5,925,371	$1,558,896
16	2018	$5,925,371	$1,426,124
17	2019	$5,925,371	$1,304,660
18	2020	$5,925,371	$1,193,541
19	2021	$5,925,371	$1,091,887
20	2022	$5,925,371	$998,890
21	2023	$5,925,371	$913,814
22	2024	$5,925,371	$835,984
23	2025	$5,925,371	$764,783
24	2026	$5,925,371	$699,646
25	2027	$5,925,371	$640,056
26	2028	$5,925,371	$585,542
27	2029	$5,925,371	$535,671
28	2030	$5,925,371	$490,048
29	2031	$5,925,371	$448,310
30	2032	$5,925,371	$410,127
31	2033	$5,925,371	$375,197
32	2034	$5,925,371	$343,241
33	2035	$5,925,371	$314,007
34	2036	$5,925,371	$287,263
35	2037	$5,925,371	$262,796
36	2038	$5,925,371	$240,414
37	2039	$5,925,371	$219,938
38	2040	$5,925,371	$201,205
39	2041	$5,925,371	$184,069
40	2042	$5,925,371	$168,391
		Total (2003$)	$61,836,515

Snoqualmie Falls Refurbished Project
O&M Costs

O&M in $/MWH (1995$)	3.2	$/MWH
Inflation % (1995 to 2003)	27.66%	
O&M in $/MWH (2003$)	4.1	$/MWH
Revenue Sensitive Taxes - Rate	6.36%	
O&M in $/MWH "Grossed up" (2003$)	4.3	$/MWH
Annual Inflation Rate	3.10%	
Capital Recovery Factor	9.31%	

Period	Year	Inflated O&M ($/MWH)	Generation (MWH)	Annual O&M ($/MWH)	Present Value ($)
1	2003	4.3	306,000	$1,315,800	$1,203,733
2	2004	4.4	306,000	$1,356,590	$1,135,347
3	2005	4.6	306,000	$1,398,644	$1,070,847
4	2006	4.7	306,000	$1,442,002	$1,010,011
5	2007	4.9	306,000	$1,486,704	$952,632
6	2008	5.0	306,000	$1,532,792	$898,512
7	2009	5.2	306,000	$1,580,308	$847,467
8	2010	5.3	306,000	$1,629,298	$799,321
9	2011	5.5	306,000	$1,679,806	$753,911
10	2012	5.7	306,000	$1,731,880	$711,081
11	2013	5.8	306,000	$1,785,569	$670,684
12	2014	6.0	306,000	$1,840,921	$632,581
13	2015	6.2	306,000	$1,897,990	$596,644
14	2016	6.4	306,000	$1,956,827	$562,748
15	2017	6.6	306,000	$2,017,489	$530,778
16	2018	6.8	306,000	$2,080,031	$500,624
17	2019	7.0	306,000	$2,144,512	$472,183
18	2020	7.2	306,000	$2,210,992	$445,358
19	2021	7.4	306,000	$2,279,533	$420,057
20	2022	7.7	306,000	$2,350,198	$396,193
21	2023	7.9	306,000	$2,423,055	$373,685
22	2024	8.2	306,000	$2,498,169	$352,455
23	2025	8.4	306,000	$2,575,612	$332,432
24	2026	8.7	306,000	$2,655,456	$313,546
25	2027	8.9	306,000	$2,737,776	$295,733
26	2028	9.2	306,000	$2,822,647	$278,933
27	2029	9.5	306,000	$2,910,149	$263,086
28	2030	9.8	306,000	$3,000,363	$248,140
29	2031	10.1	306,000	$3,093,375	$234,043
30	2032	10.4	306,000	$3,189,269	$220,747
31	2033	10.7	306,000	$3,288,137	$208,206
32	2034	11.1	306,000	$3,390,069	$196,378
33	2035	11.4	306,000	$3,495,161	$185,221
34	2036	11.8	306,000	$3,603,511	$174,699
35	2037	12.1	306,000	$3,715,220	$164,774
36	2038	12.5	306,000	$3,830,392	$155,413
37	2039	12.9	306,000	$3,949,134	$146,584
38	2040	13.3	306,000	$4,071,557	$138,256
39	2041	13.7	306,000	$4,197,775	$130,402
40	2042	14.1	306,000	$4,327,906	$122,993
				Total (2003$)	$19,146,437

Snoqualmie Falls Refurbished Project
Continuing Expenditures, Page 1 of 2

Amount in 1996$	$220,000
Annual Inflation Rate	3.10%
Inflation Rate from 1996 to 2003	27.66%
Amount in 2003$	$280,852
Levelized Fixed Charge Rate	13.35%
Capital Recovery Factor	9.31%

Period	Year	[illegible]	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
			$280,852	$289,558	$298,535	$307,790	$317,331	$327,168	$337,310	$347,767	$358,548	$369,663	$381,122	$392,937	$405,118	$417,677	$430,625	$443,974	$457,737	$471,927	$486,557	$501,640	$517,191
			$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
1	2003		$37,494																				
2	2004		$37,494	$38,656																			
3	2005		$37,494	$38,656	$39,854																		
4	2006		$37,494	$38,656	$39,854	$41,090																	
5	2007		$37,494	$38,656	$39,854	$41,090	$42,364																
6	2008		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677															
7	2009		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031														
8	2010		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427													
9	2011		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866												
10	2012		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350											
11	2013		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880										
12	2014		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457									
13	2015		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083								
14	2016		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760							
15	2017		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488						
16	2018		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271					
17	2019		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108				
18	2020		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002			
19	2021		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955		
20	2022		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	
21	2023		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
22	2024		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
23	2025		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
24	2026		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
25	2027		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
26	2028		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
27	2029		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
28	2030		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
29	2031		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
30	2032		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
31	2033		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
32	2034		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
33	2035		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
34	2036		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
35	2037		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
36	2038		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
37	2039		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
38	2040		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
39	2041		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045
40	2042		$37,494	$38,656	$39,854	$41,090	$42,364	$43,677	$45,031	$46,427	$47,866	$49,350	$50,880	$52,457	$54,083	$55,760	$57,488	$59,271	$61,108	$63,002	$64,955	$66,969	$69,045

Snoqualmie Falls Refurbished Project
Continuing Expenditures, Page 2 of 2

Amount in 1996$	$220,000
Annual Inflation Rate	3.10%
Inflation Rate from 1996 to 2003	27.46%
Amount in 2003$	$280,852
Levelized Fixed Charge Rate	13.35%
Capital Recovery Factor	9.31%

2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	TOTAL ($)	Present Value ($)	Period	Year
$533,224	$549,754	$566,796	$584,367	$602,482	$621,159	$640,415	$660,268	$680,736	$701,839	$723,596	$746,027	$769,154	$792,998	$817,581	$842,926	$869,057	$895,998	$923,773				
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147	$112,631	$116,019	$119,618	$123,324				
																			$37,494	$34,300	1	2003
																			$76,150	$63,731	2	2004
																			$116,004	$88,817	3	2005
																			$157,084	$110,032	4	2006
																			$199,458	$127,906	5	2007
																			$243,136	$142,524	6	2008
																			$288,168	$154,534	7	2009
																			$334,592	$164,149	8	2010
																			$382,459	$171,651	9	2011
																			$431,808	$177,293	10	2012
																			$482,688	$181,304	11	2013
																			$535,145	$183,888	12	2014
																			$589,220	$186,227	13	2015
																			$644,968	$186,487	14	2016
																			$702,477	$184,813	15	2017
																			$761,747	$183,338	16	2018
																			$822,965	$181,178	17	2019
																			$885,968	$179,437	18	2020
																			$950,813	$176,209	19	2021
																			$1,017,782	$171,676	20	2022
																			$1,086,827	$167,611	21	2023
$71,185																			$1,158,012	$163,379	22	2024
$71,185	$73,392																		$1,231,404	$158,936	23	2025
$71,185	$73,392	$75,687																	$1,307,072	$154,334	24	2026
$71,185	$73,392	$75,687	$78,013																$1,385,084	$149,616	25	2027
$71,185	$73,392	$75,687	$78,013	$80,431															$1,465,518	$144,822	26	2028
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925														$1,548,441	$139,984	27	2029
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496													$1,633,938	$135,132	28	2030
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148												$1,722,082	$130,292	29	2031
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878											$1,812,960	$125,495	30	2032
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696										$1,906,658	$120,730	31	2033
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600									$2,003,256	$116,043	32	2034
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595								$2,102,850	$111,438	33	2035
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682							$2,205,532	$106,924	34	2036
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865						$2,311,388	$102,513	35	2037
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147					$2,420,846	$98,210	36	2038
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147	$112,631				$2,533,076	$94,023	37	2039
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147	$112,631	$116,019			$2,649,084	$89,954	38	2040
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147	$112,631	$116,019	$119,618		$2,768,710	$86,008	39	2041
$71,185	$73,392	$75,687	$78,013	$80,431	$82,925	$85,496	$88,148	$90,878	$93,696	$96,600	$99,595	$102,682	$105,865	$109,147	$112,631	$116,019	$119,618	$123,324	$2,892,034	$82,188	40	2042
																		Total (2003$)	$47,804,424	$5,582,816		

Snoqualmie Falls Refurbished Project
Total Present Value Project Cost

Project Cost (2003$)

Capital Cost (Existing Plant & Improvements)	$61,836,515
Operating & Maintenance Present Value	$19,146,437
Continuing Capital Expenditures Present Value	$5,522,916
Total Present Value Project Cost	$86,505,868
Levelized Project Cost ($/MWH) in 2003$	26.32

Snoqualmie Falls Refurbished Project
Avoided Cost Calculation Based on 20-Year Contract

		Winter Energy (Sep - Mar)			Summer Energy (Apr - Aug)					
Period	Year	Energy (MWH)	Avoided Cost ($/MWH)	Value ($)	Energy (MWH)	Avoided Cost ($/MWH)	Value ($)	Total Cost Ceiling ($)	Annual Energy (MWH)	Avoided Cost ($/MWH)
1	2003	178,500	29.66	$5,294,310	127,500	23.08	$2,942,700	$8,237,010	306,000	26.92
2	2004	178,500	30.41	$5,428,185	127,500	23.66	$3,016,650	$8,444,835	306,000	27.60
3	2005	178,500	31.17	$5,563,845	127,500	24.25	$3,091,875	$8,655,720	306,000	28.29
4	2006	178,500	31.95	$5,703,075	127,500	24.86	$3,169,650	$8,872,725	306,000	29.00
5	2007	178,500	32.94	$5,879,790	127,500	25.48	$3,248,700	$9,128,490	306,000	29.83
6	2008	178,500	33.56	$5,990,460	127,500	26.11	$3,329,025	$9,319,485	306,000	30.46
7	2009	178,500	34.40	$6,140,400	127,500	26.77	$3,413,175	$9,553,575	306,000	31.22
8	2010	178,500	35.26	$6,293,910	127,500	27.44	$3,498,600	$9,792,510	306,000	32.00
9	2011	178,500	36.14	$6,450,990	127,500	28.12	$3,585,300	$10,036,290	306,000	32.80
10	2012	178,500	37.05	$6,613,425	127,500	28.82	$3,674,550	$10,287,975	306,000	33.62
11	2013	178,500	37.97	$6,777,645	127,500	29.55	$3,767,625	$10,545,270	306,000	34.46
12	2014	178,500	38.92	$6,947,220	127,500	30.28	$3,860,700	$10,807,920	306,000	35.32
13	2015	178,500	39.90	$7,122,150	127,500	31.04	$3,957,600	$11,079,750	306,000	36.21
14	2016	178,500	40.89	$7,298,865	127,500	31.82	$4,057,050	$11,355,915	306,000	37.11
15	2017	178,500	41.92	$7,482,720	127,500	32.61	$4,157,775	$11,640,495	306,000	38.04
16	2018	178,500	42.96	$7,668,360	127,500	33.43	$4,262,325	$11,930,685	306,000	38.99
17	2019	178,500	44.04	$7,861,140	127,500	34.26	$4,368,150	$12,229,290	306,000	39.97
18	2020	178,500	45.14	$8,057,490	127,500	35.12	$4,477,800	$12,535,290	306,000	40.97
19	2021	178,500	46.27	$8,259,195	127,500	36.00	$4,590,000	$12,849,195	306,000	41.99
20	2022	178,500	47.42	$8,464,470	127,500	36.90	$4,704,750	$13,169,220	306,000	43.04

Levelized Value ($/MWH) in 2003$ 32.11

Snoqualmie Falls Refurbished Project
Generation Value Projected Over 40-Year License

Capital Recovery Factor 9.31%

Period	Year	Avoided Cost ($/MWH)	Annual Value ($)	Present Worth ($)
1	2003	0.00	$306,000	$279,938
2	2004	0.00	$306,000	$256,095
3	2005	0.00	$306,000	$234,284
4	2006	0.00	$306,000	$214,329
5	2007	0.00	$306,000	$196,075
6	2008	0.00	$306,000	$179,375
7	2009	0.00	$306,000	$164,098
8	2010	0.00	$306,000	$150,121
9	2011	0.00	$306,000	$137,335
10	2012	0.00	$306,000	$125,638
11	2013	0.00	$306,000	$114,938
12	2014	0.00	$306,000	$105,148
13	2015	0.00	$306,000	$96,193
14	2016	0.00	$306,000	$88,000
15	2017	0.00	$306,000	$80,505
16	2018	0.00	$306,000	$73,648
17	2019	0.00	$306,000	$67,376
18	2020	0.00	$306,000	$61,637
19	2021	0.00	$306,000	$56,388
20	2022	0.00	$306,000	$51,585
21	2023	0.00	$313,619	$48,367
22	2024	0.00	$321,429	$45,349
23	2025	0.00	$329,432	$42,520
24	2026	0.00	$337,635	$39,867
25	2027	0.00	$346,042	$37,379
26	2028	0.00	$354,659	$35,047
27	2029	0.00	$363,490	$32,861
28	2030	0.00	$372,540	$30,810
29	2031	0.00	$381,817	$28,888
30	2032	0.00	$391,324	$27,086
31	2033	0.00	$401,068	$25,396
32	2034	0.00	$411,054	$23,811
33	2035	0.00	$421,290	$22,326
34	2036	0.00	$431,780	$20,933
35	2037	0.00	$442,531	$19,627
36	2038	0.00	$453,550	$18,402
37	2039	0.00	$464,844	$17,254
38	2040	0.00	$476,418	$16,178
39	2041	0.00	$488,281	$15,168
40	2042	0.00	$500,439	$14,222
			Total (2003$)	$3,294,195

Snoqualmie Falls Refurbished Project
Average Cost of Capital Over Construction Period

Capital Type	Capital Structure	Marginal Cost	Weighted Forecast Cost Rate
Short-Term Debt	2.4%	6.80%	0.16%
Long-Term Debt	41.2%	8.08%	3.33%
Preferred Equity	8.4%	8.24%	0.69%
Common Equity	48.0%	11.20%	5.38%
Estimated Cost of Capital	100.0%		9.56%

Cost of Capital from FMS study FE0195

Structure

	1995	1996	1997	1998	1999	2000	Average
LTD	41.47%	40.74%	41.44%	40.49%	41.59%	41.59%	41.22%
STD	3.49%	3.16%	2.30%	3.08%	1.85%	0.48%	2.39%
PFD	8.59%	8.70%	8.56%	8.29%	8.05%	7.97%	8.36%
CMN	46.46%	47.40%	47.71%	48.13%	48.52%	49.96%	48.03%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Incremental Cost Rates

	1995	1996	1997	1998	1999	2000	Average
LTD	8.65%	8.52%	8.08%	7.90%	7.76%	7.58%	8.08%
STD	7.37%	7.19%	6.67%	6.56%	6.53%	6.48%	6.80%
PFD	8.76%	8.64%	8.30%	8.06%	7.91%	7.78%	8.24%
CMN	9.95%	10.49%	11.64%	11.91%	11.54%	11.67%	11.20%

Incremental Weighted Cost of Capital

	1995	1996	1997	1998	1999	2000	Average
LTD	3.59%	3.47%	3.35%	3.20%	3.23%	3.15%	3.33%
STD	0.26%	0.23%	0.15%	0.20%	0.12%	0.03%	0.17%
PFD	0.75%	0.75%	0.71%	0.67%	0.64%	0.62%	0.69%
CMN	4.62%	4.97%	5.55%	5.73%	5.60%	5.83%	5.38%
Total	9.22%	9.42%	9.76%	9.80%	9.58%	9.63%	9.57%

Snoqualmie Falls Refurbished Project
Existing Plant Balance

Category	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
BOOK COST:										
Snoqualmie Plant #1:										
Hydraulic Production										
Land	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45
Other	4,017,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06	4,617,756.06
Transmission	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12	508,463.12
Total	4,558,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63	5,158,969.63
Snoqualmie Plant #2:										
Hydraulic Production										
Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09	4,349,497.09
Transmission	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21	495,266.21
Total	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30	4,844,763.30
Project Total	9,403,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93	10,003,732.93
ACCUM. DEPRECIATION:										
Snoqualmie Plant #1:										
Hydraulic Production										
Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	1,292,885.65	1,381,243.85	1,479,602.06	1,577,960.26	1,676,318.47	1,774,676.67	1,873,034.87	1,971,393.08	2,069,751.28	2,168,109.49
Transmission	253,650.07	269,395.70	275,141.34	280,886.97	286,632.60	292,378.24	298,123.87	303,869.50	309,615.14	315,360.77
Total	1,546,535.72	1,650,639.56	1,754,743.39	1,858,847.23	1,962,951.07	2,067,054.91	2,171,158.74	2,275,262.58	2,379,366.42	2,483,470.26
Snoqualmie Plant #2:										
Hydraulic Production										
Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	1,489,699.44	1,584,953.43	1,680,207.41	1,775,461.40	1,870,715.39	1,965,969.37	2,061,223.36	2,156,477.34	2,251,731.33	2,346,985.32
Transmission	193,151.00	203,848.75	214,546.50	225,244.25	235,942.00	246,639.75	257,337.50	268,035.25	278,733.00	289,430.75
Total	1,682,850.44	1,788,802.18	1,894,753.91	2,000,705.65	2,106,657.39	2,212,609.12	2,318,560.86	2,424,512.59	2,530,464.33	2,636,416.07
Project Total	3,229,386.16	3,439,441.73	3,649,497.31	3,859,552.88	4,069,608.45	4,279,664.03	4,489,719.60	4,699,775.18	4,909,830.75	5,119,886.32
NET BOOK VALUE:										
Snoqualmie Plant #1:										
Hydraulic Production										
Land	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45	32,750.45
Other	2,734,870.41	3,236,512.21	3,138,154.00	3,039,795.80	2,941,437.59	2,843,079.39	2,744,721.19	2,646,362.98	2,548,004.79	2,449,646.57
Transmission	244,813.05	239,067.42	233,321.78	227,576.15	221,830.52	216,084.88	210,339.25	204,593.62	198,847.98	193,102.35
Total	3,012,433.91	3,508,330.07	3,404,226.24	3,300,122.40	3,196,018.56	3,091,914.72	2,987,810.89	2,883,707.05	2,779,603.21	2,675,499.37
Snoqualmie Plant #2:										
Hydraulic Production										
Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	2,859,797.65	2,764,543.66	2,669,289.68	2,574,035.69	2,478,781.70	2,383,527.72	2,288,273.73	2,193,019.75	2,097,765.76	2,002,511.77
Transmission	302,115.21	291,417.46	280,719.71	270,021.96	259,324.21	248,626.46	237,928.71	227,230.96	216,533.21	205,835.46
Total	3,161,912.86	3,055,961.12	2,950,009.39	2,844,057.65	2,738,105.91	2,632,154.18	2,526,202.44	2,420,250.71	2,314,298.97	2,208,347.23
Project Total	6,174,346.77	6,564,291.20	6,354,235.62	6,144,180.05	5,934,124.48	5,724,068.90	5,514,013.33	5,303,957.75	5,093,902.18	4,883,846.61
ANNUAL DEPRECIATION:										
Snoqualmie Plant #1:	Depr. Rates									
Hydraulic Production										
Land	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	2.13%	98,358.20	98,358.20	98,358.20	98,358.20	98,358.20	98,358.20	98,358.20	98,358.20	98,358.20
Transmission	1.13%	5,745.63	5,745.63	5,745.63	5,745.63	5,745.63	5,745.63	5,745.63	5,745.63	5,745.63
Total		104,103.84	104,103.84	104,103.84	104,103.84	104,103.84	104,103.84	104,103.84	104,103.84	104,103.84
Snoqualmie Plant #2:										
Hydraulic Production										
Land	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	2.19%	95,253.99	95,253.99	95,253.99	95,253.99	95,253.99	95,253.99	95,253.99	95,253.99	95,253.99
Transmission	2.16%	10,697.75	10,697.75	10,697.75	10,697.75	10,697.75	10,697.75	10,697.75	10,697.75	10,697.75
Total		105,951.74	105,951.74	105,951.74	105,951.74	105,951.74	105,951.74	105,951.74	105,951.74	105,951.74
Project Total		210,055.57	210,055.57	210,055.57	210,055.57	210,055.57	210,055.57	210,055.57	210,055.57	210,055.57

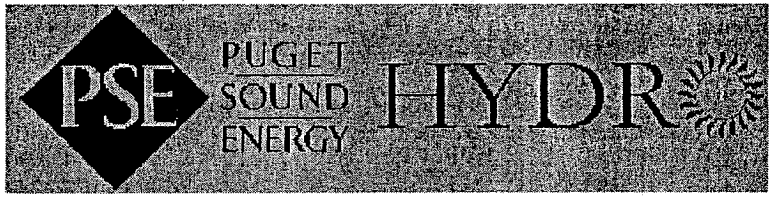
Snoqualmie Falls Refurbished Project
Original Cost and Net Investment

Balances as of 12-31-94	Book Cost	Accumulated Provision for Depreciation	Book Value
Plant 1			
Hydraulic Production			
Land	32,750.45	0.00	32,750.45
Other	4,017,756.06	(1,282,885.65)	2,734,870.41
Transmission	508,463.12	(263,650.07)	244,813.05
	4,558,969.63	(1,546,535.72)	3,012,433.91
Plant 2			
Hydraulic Production			
Land	0.00	0.00	0.00
Other	4,349,497.09	(1,489,699.44)	2,859,797.65
Transmission	495,266.21	(193,151.00)	302,115.21
	4,844,763.30	(1,682,850.44)	3,161,912.86
Total (1995$)	9,403,732.93	(3,229,386.16)	6,174,346.77

Snoqualmie Falls Relicensing

Document 4

April 2003 Officer Update



Hydroelectric Licensing Update

Energy Production & Storage

April 29, 2003

Ed Schild - Director, Energy Production & Storage
Joel Molander - Asset Manager, Hydroelectric Generation
Lloyd Pernela - Asset Manager, Plant Licensing
Kris Olin - Manager Plant Technical Services

Snoqualmie Falls Project

FERC No. 2493

- Project Overview
- License Update
- Scenarios and Assumptions
- Financial Summary
- Refurbishment Schedule

Snoqualmie Falls: Project Overview

➢ Project Overview

- Snoqualmie Falls Project consists of two powerhouses for a combined FERC Authorized capacity of 44,057 kW. It is a run of the river hydro project.
- Powerhouse One was constructed in 1898 and is located within a cavern with a tunnel-tailrace. It has five units yielding an Authorized capacity of 11,600 kW at 270 net feet of head.
- Powerhouse Two was constructed in 1910 with a single generating unit. A second unit was added in 1957, resulting in an Authorized capacity of 32,457 kW at 267 net feet of head.
- In 2001, the Snoqualmie Project produced 242,553 MWh.
- Snoqualmie Falls is a spectacular tourist attraction with an estimated 1.5 million visitors each year. PSE maintains two observation decks and picnic facilities. Current license has a minimum flow over the Falls of 100 cfs during daylight hours and 25 cfs at night.
- The FERC license for Snoqualmie Falls Project expired December 31, 1993. The project continues to operate under a FERC annual license each year since.
- Each year PSE withdraws its Washington Department of Ecology (DOE) request for 401 water quality certification and then reapplies. FERC has a one year time limit for WQC certification.

Snoqualmie Falls: Licensing Update

➢ Licensing Update

- PSE filed a FERC license application for the Snoqualmie Falls Project in 1991, increasing capacity from 42 MW to 73 MW with a proposed additional 1,500 cfs water right.
- A "refurbished project" license application was filed in 1995, expanding the project from 42 MW to 47 MW based on efficiency gains and no change in water right.
- The FEIS was issued in September 1996.
- City of Snoqualmie and DOE declared the FEIS inadequate in 1998 and scoped out a supplemental EIS in 1999.
- In December 2001, FERC focuses upon the oldest 51 outstanding license applications and conducts public hearings. Snoqualmie Falls Project was the 11th oldest outstanding.
- Request to FERC for PSE to be non-Federal designee for Supplemental Biological Assessment.
- In 2002, City of Snoqualmie and DOE begin SEIS studies.
- In December 2002, PSE and City of Snoqualmie reach agreement, wherein the City withdraws its SEIS and PSE agrees to keep the current diversion dam elevation in the new licensed project.
- Fall 2002, NMFS and USFW find no significant impact by project

Snoqualmie Falls: Licensing Update

➢ Licensing Update (continued)

- Spring 2003, PSE and DOE initiate discussions with DOE on WQC and agree in April to new aesthetic flow regime [monthly flows constant: 100 cfs August through April; May 200 cfs; June 1-15 450 cfs; June 16-July @ 200 cfs.]
- Withdrew and resubmitted Request for WQC in April for 2003/4.
- DOE issues notice of Snoqualmie WQC May 2003
- PSE, City and County enter into Limited Use Permit
- City issues shoreline permit. PSE applies for Coastal Zone Management Act (CZMA) consistency determination.
- DOE issues CZMA Certification.
- Submit WQC and CZMA consistency to FERC, arrange meeting
- FERC considers all and issues License with WQC flows.
- Army Corps of Engineers 205 channelization project. Slowly getting finance and coordination agreements, project design needs to be finalized, relocations, real estate transactions slow. Work should commence next season.

Snoqualmie Falls: Licensing Update

- **Licensing Update (continued)**
  - Snoqualmie Falls Relicensing Costs: PDEA, application, settlement agreement, staff, overheads
  - 2000 actual includes all pre-2000 CWIP

Fiscal Year	Budget/Actual
2000 (A)	$11,672,000
2001 (A)	$71,000
2002 (A)	$401,000
2003 (B)	$765,000
2004 (B)	$400,000
2005 (B)	$300,000
Total Cost	***$13,609,000***

Snoqualmie Falls: License Update

➢ License Update (continued)

- Continue work with Snoqualmie Indian Tribe for sale/transfer of plant to Tribe in exchange for power contract or equivalent asset value.
- Anticipate FERC license by end of 2003 based on successful resolution of aesthetic flows and CZMA.

➢ Present value of capital and operating costs:

- License-related
  - PV $44.4 million license-related capital
  - PV $2.9 million license-related O&M
- Plant-related
  - PV $7.8 million plant recurring capital
  - PV $12.9 million plant O&M

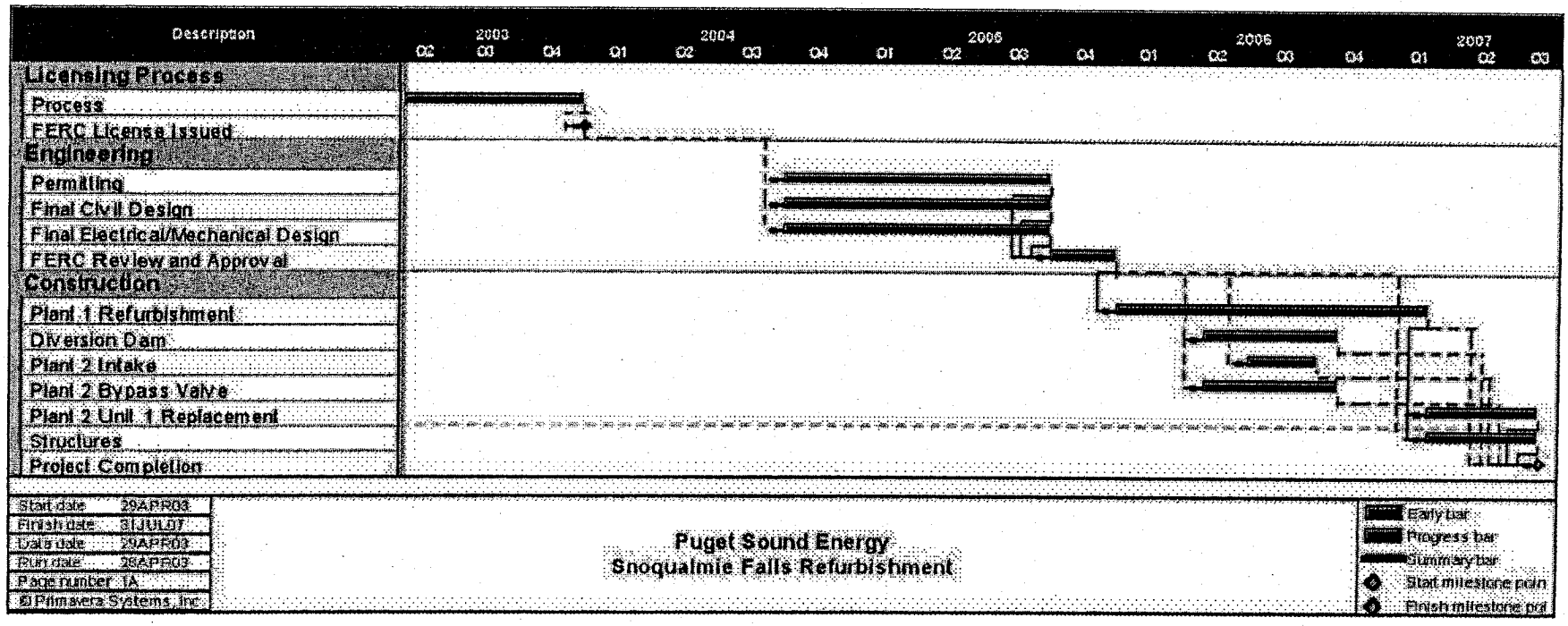
Snoqualmie Falls: Financial Summary

33-year Analysis Horizon	Scenario 1 Current MIF	Scenario 2 PSE Proposal	Scenario 3 WDOE Proposal	Scenario 4 Hybrid Alternative
Economic Summary (Medium)				
PV Market Revenue	$155,360,000	$154,288,000	$152,918,000	$153,170,000
PV Regulated Revenue Requirement	$91,337,000	$91,337,000	$91,337,000	$91,337,000
Variance	$64,023,000	$62,951,000	$61,581,000	$61,833,000
Variance to Scenario 1	$0	($1,072,000)	($2,442,000)	($2,190,000)
Plant Levelized Revenue Requirement	***$7,846,000***	***$7,846,000***	***$7,846,000***	***$7,846,000***
Annual Average Plant Output (MWh)	302,000	299,000	296,000	298,000
Plant Cost per MWh 33-year Levelized	$25.94	$26.22	$26.46	$26.56
Replacement Power Purchases (MWh)	0	3,000	6,000	4,000
Total Levelized Revenue Requirement	$7,846,000	$7,938,000	$8,055,000	$8,034,000
Total Cost per MWh 33-year Levelized	***$25.94***	***$26.25***	***$26.64***	***$26.56***

Snoqualmie Falls: Draft Schedule

➢ Project Schedule Assumptions

- FERC license issued by December 31, 2003
- Assumes no 2-year construction schedule extension
- Will be modified to reflect final scope of work currently under review by PSE



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