EXHIBIT NO. ___(PKW-1CT)
DOCKET NO. UE-13____
2013 PSE PCORC
WITNESS: PAUL K. WETHERBEE

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-13____**

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF PAUL K. WETHERBEE ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

REVISED JUNE 7, 2013

APRIL 25, 2013

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF PAUL K. WETHERBEE

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PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY (CONFIDENTIAL) OF PAUL K. WETHERBEE

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Paul K. Wetherbee, and my business address is 10885 N.E. Fourth Street, Bellevue, Washington 98004. I am employed by Puget Sound Energy, Inc. ("PSE") as a Director, Hydroelectric and Wind Resources & Asset Management.

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exhibit No. ___(PKW-2).

Q. Please summarize your prefiled direct testimony.

A. This prefiled direct testimony addresses the following issues that affect the rate year in this proceeding, November 1, 2013 through October 31, 2014 (the "rate year"):

(i) Implementation of the Federal Energy Regulatory Commission ("FERC") license requirements for the Baker River Hydroelectric Project (the "Baker River Project"), including the construction of a downstream fish collection facility and a new powerhouse and generating unit at Lower Baker;

(ii) Implementation of the FERC license requirements for the Snoqualmie Falls Hydroelectric Project (the "Snoqualmie Falls Project");

(iii) Incremental electricity produced as a result of the efficiency improvements at the Baker River Project and the Snoqualmie Falls Project that constitute eligible renewable resources under the Energy Independence Act, Chapter 19.285, RCW ("EIA");

(iv) Sale of the Electron Hydroelectric Project (the "Electron Project"); and

(v) PSE's rate year production operations and maintenance expense adjustments and projections for the hydroelectric and wind generation facilities, including operations and maintenance ("O&M") expenses required to meet FERC relicensing requirements during the rate year.

II. BAKER RIVER PROJECT LICENSE IMPLEMENTATION

A. History and Description of the Baker River Project

Q. Please describe PSE's Baker River Project

A. The Baker River Project, FERC Project No. 2150, is owned and operated by PSE and is located on the Baker River in Skagit and Whatcom Counties, north of, and partially within, the Town of Concrete. The Baker River Project consists of two developments: the Lower Baker Development and the Upper Baker Development. The present installed capacity of the Baker River Project is 170 MW.

Q. Please describe the Lower Baker Development.

A. The Lower Baker Development began commercial operations in 1925 and currently consists of (i) a concrete arch dam 1.2 river miles upstream of the Baker River's confluence with the Skagit River, (ii) a 7-mile-long reservoir, (iii) a power tunnel, (iv) a single-unit powerhouse at river mile 0.9, (v) a fish barrier dam and

trap at river mile 0.6, (vi) a primary transmission line, and (vii) associated facilities. The current installed plant capacity is 79.3 MW. The 2008 FERC license order authorized installation of an additional 30 MW at Lower Baker, and construction of a new powerhouse containing a 30 MW generating unit is currently underway.

Q. Please describe the Upper Baker Development.

A. The Upper Baker Development commenced commercial operations in 1959. It consists of (i) a concrete gravity dam at river mile 9.35, (ii) an earthen dike, (iii) a 9-mile-long reservoir, (iv) a two-unit powerhouse, and (v) associated facilities. The authorized capacity of the Upper Baker Development is 90.7 MW.

B. FERC License No. 2150 and the Requirements of the License

Q. What is the status of the Baker River Project FERC license?

A. PSE began the formal relicensing process required by FERC in early 2000, several years before the existing license expired in April 2006. PSE used FERC's Alternate Licensing Process for the relicensing of the Baker River Project, and this process ultimately led to a comprehensive settlement agreement setting forth proposed terms of a new license for Baker River Project that PSE filed as an offer of settlement with FERC on November 30, 2004. PSE received the new license for the Baker River Project from FERC for a term of 50 years with an effective date of October 1, 2008. FERC approved the comprehensive settlement agreement and incorporated it in the license order. Since issuance of the new license in 2008, PSE has been working to implement the requirements of the new

license including completion of large capital projects aimed primarily at improving migratory fish facilities.

Q. Have the terms of the comprehensive settlement agreement and new FERC license previously been reviewed by the Commission?

A. Yes. In PSE's 2006 general rate case, the Prefiled Direct Testimony of Mr. Kris Olin, Exhibit No. 351HC, provided a detailed summary of the relicensing process, the terms of the settlement agreement, and PSE's analysis of alternatives to relicensing the Baker River Project.

Q. Did the Commission make any determination in that case regarding PSE's decision to relicense the Baker River Project?

A. Yes. In the final order, the Commission reviewed the terms of the settlement agreement entered into by PSE as part of the FERC relicensing process, determined that PSE's decision to relicense the Baker River Project was prudent and found the associated costs to obtain the new license reasonable for recovery in rates.[1]

Q. What is PSE requesting with respect to implementation of the Baker River FERC license?

A. PSE requests a determination by the Commission that its implementation of the FERC license for the Baker River Project was prudent and that all costs associated with the project —including capital costs, operating costs, transmission

[1] *WUTC v. Puget Sound Energy, Inc.*, Dockets UE-060266 and UG-060267, Order 08 (January 5, 2007) ¶165.

costs and other costs—are reasonable for recovery in rates. This includes all costs associated with the construction of the Lower Baker Floating Surface Collector and the Lower Baker Powerhouse as explained in more detail later in my testimony.

Additionally, PSE requests a determination that the incremental generation produced as a result of the Baker River Project license implementation qualifies as a renewable resource under the EIA and may be used to meet PSE's renewable energy targets under the EIA. The incremental electricity produced as a result of the Baker River Project FERC license implementation is 109,575 MWh on an annual basis.

C. Status of Work Undertaken at the Baker River Project

Q. Please describe the capital improvements undertaken at the Baker River Project pursuant to the FERC license.

A. The Baker River Project's FERC license requires several capital projects aimed primarily at improving migratory fish facilities. The large capital improvements consist of construction of upstream and downstream fish passage facilities and a new fish hatchery. A new powerhouse and generating unit will increase Baker River in-stream flow for fish passage.

More specifically, PSE completed construction of a downstream fish collection facility at Upper Baker (the Upper Baker Floating Surface Collector) in March 2009. A new fish hatchery and an upstream migratory fish trap both began

operations in summer 2010. PSE's 2011 general rate case[2] included the three additions to the Baker River Project.

Completion of two additional capital improvements will occur in 2013:

- The Lower Baker downstream fish collection facility (the "Lower Baker Floating Surface Collector") was placed in service on February 14, 2013. PSE and the construction contractor are continuing to work through the final project punch list items.

- A new powerhouse and generating unit at Lower Baker (the "Lower Baker Powerhouse") is nearing completion. PSE and contractor have started testing the new unit and the facility is scheduled to begin commercial operations in June 2013.

1. Lower Baker Floating Surface Collector

Q. Please describe the Lower Baker Floating Surface Collector.

A. The Lower Baker Floating Surface Collector is a 130-foot-by-60-foot barge designed to attract, sort, and safely transfer juvenile salmon for transport downstream around Lower Baker Dam. The facility features a series of submerged screens, water pumps, fish-holding chambers, a fish-evaluation station, equipment-control rooms and a fish-loading facility. Fine-mesh guide nets extend from shore to shore and from the lake's surface to its bottom, forming an impassible funnel of netting that leads small migrating fish to the collector.

[2] *See* Dockets UE-111048 and UG-111049 (consolidated).

Q. Does the Baker River Project FERC license require PSE to construct the Lower Baker Floating Surface Collector?

A. Yes. The FERC license for the Baker River Project specifically requires construction of the Lower Baker Floating Surface Collector. Please see the Prefiled Direct Testimony of Mr. Doug S. Loreen, Exhibit No. ___(DSL-1T), for a discussion of the construction contractor selection process, PSE's approach to major generation project construction, and other information specific to construction of the Lower Baker Floating Surface Collector.

Q. Is PSE requesting that the costs associated with the Lower Baker Floating Surface Collector be included in rates?

A. Yes, as previously discussed, PSE requests to include in rates all costs incurred for construction of the Lower Baker Floating Surface Collector. The estimated total cost upon completion is $58.3 million (including AFUDC charges). As of March 1, 2013, approximately 95% of the estimated total, or $55.9 million, had been spent. Please see the Prefiled Direct Testimony of Ms. Katherine J. Barnard, Exhibit No. ___(KJB-1T), for a further discussion of the inclusion of these costs in the revenue requirement in this case.

Q. Why is the cost of the Lower Baker Floating Surface Collector appropriate for recovery in rates?

A. As a requirement of the Baker River Project FERC license, the Lower Baker Floating Surface Collector is necessary for continued operation of the Baker River Project. The Baker River Project contributes over 700 GWh per year of reliable,

emissions-free energy to PSE's electric portfolio. The FERC license authorizes the Baker River Project to continue operating over the next forty-four years for the benefit of PSE's electric customers and other stakeholders in the region. PSE followed sound design, engineering, and construction management principles to bring the Lower Baker Floating Surface Collector into operation according to timelines set forth in the FERC license and at the lowest reasonable cost. PSE therefore requests that the Commission allow inclusion of all costs associated with construction of the Lower Baker Floating Surface Collector in rates.

2. Lower Baker Powerhouse

Q. Please describe the Lower Baker Powerhouse that is currently under construction.

A. The new Lower Baker Powerhouse is a concrete structure containing a new 30 MW turbine-generator unit and associated equipment. The structure is located downstream of Lower Baker dam adjacent to the existing powerhouse for Baker Unit 3 and connected to the existing penstock via a new 1,000 feet, steel-lined tunnel. The new unit will operate in conjunction with the existing Unit 3 to generate electricity while maintaining flows in the Baker River for the benefit of migrating fish. The incremental electricity produced on an annual basis at the Baker River Project as a result of the new Lower Baker Powerhouse is 109,575 MWh.

Q. Is the new Lower Baker Powerhouse being constructed as part of PSE's implementation of the Baker River Project FERC license?

A. Yes. The Baker River Project's FERC license requires minimum flows in the Baker River downstream of Lower Baker dam at all times. These required flows cannot be maintained using the existing powerhouse and flow passages. The FERC license stipulates construction of the new Powerhouse in order to comply with the minimum flow requirements.

Q. Are there other benefits that result from PSE's decision to build the new Lower Baker Powerhouse?

A. Yes. The Lower Baker Powerhouse represents a qualifying renewable energy investment as defined by Internal Revenue Service Code Section 45 and is therefore eligible to receive a cash grant from the Department of Treasury for up to 30 percent of the cost to construct the facility. Please see the Prefiled Direct Testimony of Mr. Doug S. Loreen, Exhibit No. ___(DSL-1T), for a more detailed discussion of the Treasury Grant.

In addition, the incremental electricity produced as a result of the new powerhouse qualifies as a renewable resource under the EIA and will count toward PSE's renewable energy targets set forth in the act, as discussed in more detail later in my testimony.

Q. Is PSE requesting that the costs associated with the Lower Baker Powerhouse be included in rates?

A. Yes, as previously discussed, PSE requests to include in rates all costs incurred for construction of the Lower Baker Powerhouse. The estimated total cost upon completion is $102.2 million (including AFUDC charges). As of March 1, 2013, approximately 88% of the estimated total, or $89.7 million, had been spent. Please see the Prefiled Direct Testimony of Ms. Katherine J. Barnard, Exhibit No. ___(KJB-1T), for a further discussion of the inclusion of these costs in the revenue requirement in this case.

Q. Why is the cost of the new Lower Baker Powerhouse appropriate for recovery in rates?

A. The FERC license requires PSE to maintain minimum flows in the Baker River downstream of the Lower Baker dam at all times. Construction of the Lower Baker Powerhouse allows PSE to comply with these license requirements while generating electricity at the Baker River Project. PSE has followed sound design, engineering, and construction management principles to construct the Lower Baker Powerhouse according to timelines set forth in the FERC license at the lowest reasonable cost. PSE therefore requests that the Commission allow inclusion of all costs associated with construction of the Lower Baker Powerhouse in rates.

III. SNOQUALMIE FALLS PROJECT LICENSE IMPLEMENTATION

Q. Describe the Snoqualmie Falls Project.

A. The Snoqualmie Falls Project is a run-of-the-river project consisting of a dam and two powerhouses located on the Snoqualmie River in the City of Snoqualmie and King County, Washington. The 268-foot-high falls is the highest plunge falls in the State of Washington and one of the highest falls in the nation. Powerhouse 1 was originally constructed in 1898 with four Pelton turbines (Units 1–4). A horizontal Francis turbine (Unit 5) was installed in 1905. Powerhouse 2 began operation in 1910 with a horizontal Francis turbine (Unit 6), and an additional vertical Francis machine was brought online in 1957. The Snoqualmie Falls Project is a FERC licensed project, FERC Project No. 2493. Under the new amended license, PSE is authorized to increase the original installed capacity of 44.4 MW to 54.4 MW.

The Snoqualmie Falls Project has been a cost-effective, stable producer of firm power. It is PSE's oldest power-generating project and its park and trails are one of the most popular scenic destinations in the Pacific Northwest. The area attracts approximately two million visitors annually. The predominant activities for these visitors are viewing the falls, hiking, and picnicking. Existing recreation facilities consist of viewing decks, picnic areas, trails, restrooms, and an outdoor education center.

Q. Describe the Snoqualmie Falls Project's FERC license history.

A. The original license for the Snoqualmie Falls Project was issued May 13, 1975 with an effective date of March 1, 1956, and expired December 31, 1993. Thereafter, FERC granted annual extensions of the license pending resolution of the re-license application. In 1992, PSE increased the capacity of the facility to 44.4 MW, which was approved by the FERC in 2002. On June 29, 2004 FERC issued the existing license authorizing an installed capacity of 54.4 MW for a period of 40 years. FERC amended the license in March 2005 to incorporate additional aesthetic flows over Snoqualmie Falls in response to an appeal of the license filed by the Snoqualmie Indian Tribe.

Q. Please briefly describe the terms of the Snoqualmie Falls Project FERC license issued in June 2004 and amended by FERC in 2005.

A. The FERC license seeks to balance multiple, diverse and often competing interests in a way that serves the public interest and is commercially viable for PSE. The Snoqualmie Falls Project serves those interests by generating environmentally sound electrical power more efficiently using the existing flow of water. At the same time, other requirements of the license will enhance the existing wildlife habitat; provide increased recreational, interpretive and educational opportunities; and manage the flow of water over the falls to improve aesthetic views. In order to realize the power production and other public interest benefits associated with the Snoqualmie Falls Project, the FERC license calls for significant redevelopment and modernization of the project infrastructure. Capital

improvements required by the FERC license include replacement of the diversion dam; modifications to Powerhouse 1 including a new intake structure, new penstocks, replacement of generating units, and re-routing of transmission lines; and modifications to Powerhouse 2 including a new intake structure, penstock replacement, installation of penstock by-pass valves, replacement of a generating unit, and improvements to trails, walkways, and educational resources. The Snoqualmie Falls Project redevelopment also creates an opportunity to preserve certain components of the original installation as a public record of outstanding historic engineering achievement.

Q. Have the terms of the Snoqualmie Falls Project's FERC license previously been reviewed by the Commission?

A. Yes. In PSE's 2005 power cost only rate case, the prefiled direct testimony of Eric M. Markell, Exhibit No. ___(EMM-1HCT), provided a detailed summary of the relicensing process that resulted in the issuance of the FERC license for the Snoqualmie Falls Project, including the terms of the settlement agreement, and PSE's analysis of alternatives to relicensing the Snoqualmie Falls Project.

Q. Did the Commission make any determination in that case regarding PSE's decision to relicense the Snoqualmie Falls Project?

A. Yes. In the final order accepting the 2005 power cost only rate case settlement agreement the Commission determined that the relicensing of the Snoqualmie

Falls Project including the expenditure of costs related to obtaining the new license was prudent.[3]

Q. Have the terms of the Snoqualmie Falls Project license been altered since the Commission reviewed the prudence of the FERC license?

A. Yes. One additional amendment to the license resulted in lower redevelopment costs for the Snoqualmie Falls Project. In December 2007, PSE filed an Application for Non-Capacity License Amendment with FERC. The amendment application addressed changed circumstances resulting from a flood control project undertaken by the U.S. Army Corps of Engineers (the "Corps") in the river channel upstream of PSE's facilities and proposed other changes to the construction plan required to implement license obligations and reduce the cost of redeveloping the Snoqualmie Falls Project.

Q. Please describe the 2007 FERC license amendment.

A. PSE began implementing the license in July 2004 when it initiated upgrades to Plant 2. Concurrent with PSE's efforts to fulfill its responsibilities under the FERC license, the Corps implemented a flood reduction project ("Corps 205 project") that removed natural obstructions to the river channel upstream of the PSE facilities. PSE prepared new construction cost estimates based on these changed circumstances, evaluated the economics and ultimately developed an

[3] *See WUTC v. Puget Sound Energy, Inc.*, Docket UE-050870, Order 04 (October 20, 2005) ¶ 30 (referring to section IV.E of PCORC Settlement Agreement).

amendment proposal to address the diversion dam and to refurbish the Plant 1 water intake that took into consideration these changed circumstances.

PSE's amendment application proposed revisions to the diversion dam and the plan for modifications to Plant 1. PSE also proposed further modifications to the Plant 2 powerhouse and gatehouse that were necessary to implement improvements to these facilities that are required by the license.

Changes and additions to the scope of redevelopment of the Snoqualmie Falls Project include:

- Left bank realignment, including reconstruction of the Plant 1 crib wall, modified diversion dam and Plant 1 intake to better achieve upstream flood reduction benefits required by the license and to protect Plant 1 infrastructure from future flood damage.
- Reconstruction of the Plant 2 powerhouse to address structural inadequacies.
- Relocation and installation of additional bypass chambers at Plant 2 to ensure in-stream flow compliance.
- Relining of the power tunnel to improve hydraulic efficiencies.
- Additional site security measures, both during and post-construction, aligned with regulatory requirements and supported by industry best practices.
- Installation of emergency shutoff valves in the Plant 2 gatehouse.

On June 1, 2009, the FERC issued its order amending PSE's license for the Snoqualmie Falls Project (the "Amendment Order"). The Amendment Order

incorporated the changes proposed in PSE's December 2007 application. Please see Exhibit No. ___(PKW-3) for a copy of the Amendment Order.

Q. What is PSE requesting in this case with respect to implementation of the Snoqualmie Falls Project FERC license?

A. PSE requests a determination by the Commission that its implementation of the FERC license for the Snoqualmie Falls Project was prudent and that all costs associated with the project —including capital costs, operating costs, transmission costs and other costs—are reasonable for recovery in rates. The estimated total cost upon completion is $301.1 million (including AFUDC charges). As of March 1, 2013 approximately 90% of the estimated total, or $270.7 million, had been spent.

Additionally, PSE requests a determination that the incremental generation produced as a result of the Snoqualmie Falls Project license implementation qualifies as a renewable resource under the EIA and may be used to meet PSE's renewable energy targets under the EIA. The incremental electricity produced as a result of the Snoqualmie Falls Project FERC license implementation is 22,030,000 kWh on an annual basis.

Q. Did PSE compare the costs of Snoqualmie Falls Project redevelopment under the amended license to the cost of redevelopment under the license as it was issued in 2004?

A. Yes. Prior to acceptance of the license amendment PSE developed updated cost estimates for Snoqualmie redevelopment under both the license as issued in 2004

and the license with proposed amendments. To implement the license as issued, PSE estimated capital expenditure of $264.3 million (in 2009 dollars, not including AFUDC). To implement the amended license, PSE estimated capital expenditure of $240.0 million (in 2009 dollars, not including AFUDC), a savings of over $24 million relative to the as-issued license.

Q. What is the current status of capital improvements required to support the amended license?

A. PSE completed construction of the diversion dam in October 2012. Plants 1 is scheduled to begin commercial operation on July 1, 2013, and Plant 2 began commercial operations on April 17, 2013. Please see the Prefiled Direct Testimony of Doug S. Loreen, Exhibit No. ___(DSL-1T), for the status of construction at the Snoqualmie Falls Project.

Q. Are there any other benefits that result from PSE's decision to redevelop the Snoqualmie Falls Project in accordance with the FERC license as amended?

A. Yes. The Snoqualmie Falls Project redevelopment represents a qualifying renewable energy investment as defined by Internal Revenue Service Code Section 45 and is therefore eligible to receive a cash grant from the Department of Treasury for up to 30 percent of the cost to construct the facility. Please see the Prefiled Direct Testimony of Doug S. Loreen, Exhibit No. ___(DSL-1T), for a more detailed discussion of the Treasury Grant.

In addition, the incremental electricity produced as a result of the redevelopment qualifies as a renewable resource under the EIA and will count toward PSE's

renewable energy targets set forth in the act, as discussed in more detail later in my testimony.

Q. Why is the cost of the Snoqualmie Falls Project redevelopment appropriate for recovery in rates?

A. The Snoqualmie Falls Project FERC license as amended will allow PSE to maintain this reliable, emissions-free resource in a cost-effective manner for the remaining 31 years of the license term. The Snoqualmie Falls Project will contribute up to 54.4 MW of capacity and estimated 270 GWh per year to PSE's resource portfolio. The FERC license amendment proposed by PSE in 2007 allows the benefits of the Snoqualmie Falls Project to be delivered at a cost significantly lower than under the license as originally issued. PSE has followed sound design, engineering, and construction management principles to redevelop the Snoqualmie Falls Project according to FERC license requirements at the lowest reasonable cost. Therefore, PSE requests that the Commission approve the recovery of all costs associated with the redevelopment of the Snoqualmie Falls Project.

IV. HYDROELECTRIC EFFICIENCY IMPROVEMENTS AS RENEWABLE RESOURCES UNDER THE ENERGY INDEPENDENCE ACT

Q. Please generally describe how the additional electricity produced as a result of the upgrades to the Baker River Project and Snoqualmie Falls Project is treated under the Energy Independence Act.

A. The Energy Independence Act allows incremental electricity produced as a result of efficiency improvements to be counted as an eligible renewable resource under certain conditions. Specifically, RCW 19.285.030 defines eligible renewable resource to include the following:

> (11) "Eligible renewable resource" means:
>
> . . . .
>
> (b) Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest or to hydroelectric generation in irrigation pipes and canals located in the Pacific Northwest, where the additional generation in either case does not result in new water diversions or impoundments . . . .

The incremental electricity produced as a result of the upgrades to the Baker River Project and the Snoqualmie Falls Project, undertaken as part of the FERC license implementation for these projects, falls within the EIA's definition of "eligible renewable resources," and PSE may use this incremental electricity to meet its annual renewable energy targets.

Q. As part of the FERC license implementation of the Snoqualmie Falls Project did PSE complete energy efficiency improvements that produced incremental electricity?

A. Yes. As previously discussed, the 2004 FERC license, as amended, authorized PSE to undertake efficiencies that increased the capacity of the Snoqualmie Falls Project from the previously authorized 44.4 MW, to an installed capacity of 54.4 MW for a period of 40 years.

Q. Has PSE calculated the incremental electricity to be produced on an annual basis as a result of the upgrades undertaken to implement the Snoqualmie Falls Project FERC license?

A. Yes, the incremental electricity produced as a result of the Snoqualmie Falls Project FERC license implementation is 22,030,000 kWh on an annual basis. Please see Exhibit No. ___(PKW-4) for a description of PSE's calculation of the incremental electricity generated as a result of the upgrades. Please see Exhibit No. ___(PKW-5) for the FERC Order certifying the amount of incremental electricity produced as a result of the upgrades at the Snoqualmie Falls Project.

Q. As part of the FERC license implementation of the Baker River Project did PSE complete energy efficiency improvements that produced incremental electricity?

A. Yes, as previously discussed, the FERC license authorized PSE to build the new Lower Baker Powerhouse to comply with minimum flow requirements

downstream of the Lower Baker dam, and the new powerhouse will increase the current installed plant capacity of 79.3 MW by an additional 30 MW at Lower Baker.

Q. Has PSE calculated the incremental electricity to be produced on an annual basis as a result of the upgrades undertaken to implement the Baker River Project FERC license?

A. Yes, the incremental electricity produced as a result of the Baker River Project FERC license implementation is 109,575 MWh on an annual basis. Please see Exhibit No. ___(PKW-6) for a description of PSE's calculation of the incremental electricity generated as a result of the upgrades. Please see Exhibit No. ___(PKW-7) for the FERC Order certifying the amount of incremental electricity produced as a result of the upgrades at the Baker River Project.

Q. Did the upgrades PSE undertook to implement the FERC licenses result in any new water diversions or impoundments at the Baker River Project or the Snoqualmie Falls Project?

A. No.

V. SALE OF THE ELECTRON PROJECT

A. Background on the Electron Project

Q. Please describe the Electron Project.

A. The Electron Project was built by a predecessor of PSE and began generating electricity on April 12, 1904. The Electron Project is located on the Puyallup River in Pierce County, Washington, approximately 23 miles southeast of Tacoma.

Drainage from 91 square miles of the Puyallup and Mowich glaciers on the western slopes of Mount Rainier provide water to a diversion dam near Orting. Water is there diverted into a ten-mile long wooden flume that feeds a man-made reservoir. Four steel penstocks supply water from the reservoir down to the powerhouse. Inside the powerhouse, eight Pelton impulse-type horizontal turbines are connected in pairs to four generators—three rated at 6 MW and one at 7.5 MW, for a total plant nameplate rating of 25.5 MW.

PSE added downstream fish passage in 1998 in the form of a trap-and-haul facility and barrier net. PSE added upstream fish passage in 2000 in the form of a fish ladder.

The ten-mile wooden flume is a unique feature of the Electron Project. It includes 281 curves and a topside railroad for crew access due to limited roads along the steep river valleys of the area. Because the flume is made of wood, it has required periodic replacement. The flume was first replaced in 1938 and then replaced again in 1984-1985. In 1998, PSE installed a new plywood liner on the entire flume.

Q. What is the current condition of the Electron Project?

A. The wood flume of the Electron Project needs to be replaced. Energy production at the Electron Project is restricted by the amount of water that can be channeled through the flume to the powerhouse. Deterioration of the flume floor and sidewalls make the flume prone to leaks and blowouts, which necessitate regular repairs by plant crews. PSE has limited the amount of water allowed to enter the flume to prevent more frequent failures, but this, in turn, has limited plant output to less than 8 MW, or one-third of full operating capacity.

In addition to the flume, the original 1904 penstocks are also in need of repair or replacement. PSE engineers and contractors provided a condition assessment in 2009 indicating that the penstocks should be repaired or replaced as soon as feasible to reduce the risk of failure. Please see Exhibit No. ___(PKW-8C) for a copy of this condition assessment.

Due to the condition of the flume and penstocks, the Electron Project will not be able to continue to operate without significant capital investment.

Q. Are there any licenses, agreements, or permits that govern PSE's ownership and operation of the Electron Project?

A. The Electron Project is not a hydroelectric project licensed by the Federal Energy Regulatory Commission under Part 11 of the Federal Power Act. Operations at the plant are governed primarily by an agreement with the Puyallup Tribe of Indians (the "Puyallup Tribe"), along with various state and local permits.

In addition, PSE is in the process of securing an Incidental Take Permit in accordance with section 10(a)(2)(A) of the federal Endangered Species Act. The act allows incidental take of threatened and endangered fish species during the performance of otherwise lawful activities, provided certain conditions are met. One of those conditions is the preparation of a Habitat Conservation Plan that specifies the likely impacts of any incidental take and defines the actions and funding required to mitigate such impacts.

Q. Please describe the agreement with the Puyallup Tribe.

A. In 1997, PSE and the Puyallup Tribe agreed to settle a long-standing dispute over the Electron Project and formalized the terms of this settlement in the Resource Enhancement Agreement between PSE and the Puyallup Tribe. Please see Exhibit No. ___(PKW-9C) for a copy of the Resource Enhancement Agreement between PSE and the Puyallup Tribe.

The Resource Enhancement Agreement provides for a series of resource enhancement measures to benefit fisheries resources. Specifically, the Resource Enhancement Agreement includes provisions for:

- Minimum in-stream flows below the Electron Project dam;
- Ramping rate targets below the Electron Project powerhouse;
- Capital contributions toward the Puyallup Tribe's construction of rearing ponds and a fish ladder;
- Annual O&M contributions related to rearing ponds, a fish ladder, downstream trap and haul facilities, and activities

performed by the Puyallup Tribe related to upstream fish passage; and

- Maximum water diversion of 400 cubic feet per second ("CFS").

The Resource Enhancement Agreement expires on December 31, 2026. Under the terms of the agreement, PSE must notify the Puyallup Tribe no later than 2018 of PSE's decision either to upgrade or retire the Electron Project by 2026. The Resource Enhancement Agreement defines upgrades to the Electron Project as construction or major modification that increases the Electron Project's head, generating capacity, or otherwise significantly modifies the project's pre-1935 design and operation. The Resource Enhancement Agreement defines retiring the Electron Project to mean permanently discontinuing the generation of electricity at the project and removing the Electron Project dam from the Puyallup River.

Q. Please describe the Incidental Take Permit process and the Habitat Conservation Plan.

A. A Habitat Conservation Plan ("HCP") is being prepared in support of the application for an Incidental Take Permit ("ITP") to cover the continued operation and maintenance of the Electron Project. It has been prepared in accordance with section 10(a)(2)(A) of the federal Endangered Species Act ("ESA"), which allows for the approval of incidental take of threatened and endangered fish species during the performance of otherwise lawful activities, provided certain conditions are met. One of those conditions is the preparation of a conservation plan that specifies:

(i) The impact which will likely result from such taking.

(ii) What steps the applicant will take to minimize and mitigate such impacts and the funding that will be available to implement the steps.

(iii) What alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized.

(iv) Such other measures that the Secretaries of Interior and Commerce may require as being necessary or appropriate for purposes of the plan.

The HCP is being developed in coordination with the National Marine Fisheries Service ("NMFS") and the US Fish and Wildlife Service ("USFWS"), the federal agencies responsible for implementation and enforcement of the ESA. The plan is also being developed with consultation and coordination with the Puyallup Tribe and the Washington Department of Fish and Wildlife ("WDFW").

The HCP is being developed with a planned permit period through 2026, which aligns with PSE's Resource Enhancement Agreement with the Puyallup Tribe. Expansion of the permit period to cover the Electron Project beyond 2026 could add to the cost and schedule of the HCP due to potential revisiting of conservation measures to reflect the extended coverage period (e.g., fish passage requirements and in-stream flows). Further progress on the HCP is dependent on a decision on the Electron Project.

B. Alternatives Considered by PSE with Respect to the Redevelopment, Retirement, or Sale of the Electron Project

Q. What alternatives did PSE consider with respect to the Electron Project?

A. At an Energy Management Committee ("EMC") meeting, dated April 20, 2012, PSE presented an evaluation of three alternatives for the future of the Electron Project:

(i) PSE could make capital expenditures necessary to extend the life of the Electron Project;

(ii) PSE could retire the Electron Project including demolition and removal of the flume and other project infrastructure; or

(iii) PSE could sell the Electron Project.

Please see Exhibit No. ___(PKW-10C) for a copy of the presentation made to the EMC on April 20, 2012, and Exhibit No. ___(PKW-11C) for a copy of the memorandum presented to the EMC on April 20, 2012. PSE's analysis of each of the three alternatives is discussed further below.

1. Alternative 1: Extension of the life of the Electron Project

Q. Please describe PSE's analyses of the redevelopment and extension of the life of the Electron Project.

A. An evaluation team representing various PSE departments developed alternatives for redeveloping and extending the life of the Electron Project. The team analyzed variations of redevelopment options for both a short-term life extension (retirement in 2026) and a long-term life extension (retirement in 2062). All of

the alternatives considered included investments to repair, replace, or upgrade each of four key project features:

(i) the flume;

(ii) the penstocks;

(iii) downstream fish passage at the diversion dam; and

(iv) the Pelton turbines.

Q. What life extension options did PSE consider with regard to the flume of the Electron Project?

A. Due to the current physical condition of the flume box of the Electron Project, all options analyzed by PSE included the replacement of virtually all ten miles of the wood flume liner that carries water to the forebay. Replacement of the liner would restore the flume box's capacity to 400 CFS and generation at the plant to its rated capacity. PSE considered a range of different materials for a new flume liner and ultimately determined that Alaska yellow cedar would be the most suitable due to its high strength, longevity, and resistance to organic growth and rot. PSE estimated capital expenditures of approximately $40 million associated with replacement of the wood flume liner. For a long-term redevelopment of the Electron Project PSE estimated approximately $6 million of additional cost for improvements to the flume's supporting structure.

Q. What options did PSE consider for the penstocks of the Electron Project?

A. As mentioned above, the Electron Project's original 1904 penstocks need to be repaired or replaced. PSE estimated that it would cost approximately $3.5 million

for weld repairs to the penstocks and approximately $12 million for penstock replacement. The replacement alternative was recommended by PSE engineers due to continued risk of failure associated with the repair alternative. Penstock repairs would be only a temporary solution requiring additional monitoring and frequent inspections. Due to the continued operational and financial risks posed by penstock repairs, PSE concluded that replacement of the penstocks would be included in the most likely short-term and long-term life extension alternatives for the Electron Project.

Q. What options did PSE consider with regard to downstream fish passage at the Electron Project?

A. PSE projected that the installation of an engineered, in-river screen (a Coanda screen) would be a part of any plan to rebuild and continue to operate the Electron Project. The installation of a Coanda screen would likely be required as a condition of the HCP and ITP in order to keep endangered fish species from entering the Electron Project flume. PSE estimated capital expenditures of approximately $10 million associated with the installation of a Coanda screen.

Q. What options did PSE consider with regard to upgrades of the turbines at the Electron Project?

A. PSE projected that upgrading vintage 1904 design turbines to modern machined, single-piece Pelton wheels and nozzles could improve efficiency by approximately 25% and increase generation to approximately 184,000 MWh on an annual basis (using 20-year average water data). PSE estimated capital

expenditures of approximately $5 million associated with upgrades to the turbines. All options considered by PSE included the costs and benefits associated with the turbine upgrades because PSE projected that it could recoup this capital expenditure within three to five years, depending on weather and river flows.

Q. Please summarize the short-term redevelopment option PSE considered to extend the life of the Electron Project.

A. PSE defined short-term life extension as extending the life of the Electron Project through 2026 (the end of the term of the current Resource Enhancement Agreement). Based on the costs and risks associated with each of the four key features described above, PSE determined that the most likely option for short term life extension would include

(i) replacing the wood flume liner with Alaska yellow cedar,

(ii) replacing the penstocks,

(iii) installing an engineered, in-river screen (Coanda screen) at the diversion dam, and

(iv) upgrading the wheels and nozzles of the Pelton turbines.

PSE estimated the cost of this short-term redevelopment option to be approximately $69 million. Due to uncertainty around minimum in-stream flows that would be required under the HCP/ITP, PSE modeled the costs and benefits of the short term life extension with varying minimum in-stream flow requirements of 100 CFS, 130 CFS, and 160 CFS.

Q. Please summarize the long-term redevelopment option PSE considered to extend the life of the Electron Project?

A. PSE defined long-term life extension as extending the life of the Electron Project through 2062. An approximately 50 year life extension was assumed for long-term redevelopment because this period corresponds with the anticipated life of a flume liner rebuilt with Alaska yellow cedar. The primary scope of work associated with the most likely long-term redevelopment option is the same as short-term redevelopment with the addition of improvements to the flume's support structure. It includes

(i) replacing the wood flume liner with Alaska yellow cedar and replacing components of the support structure to improve stability,

(ii) replacing the penstocks,

(iii) installing an engineered, in-river screen (Coanda screen) at the diversion dam, and

(iv) upgrading the wheels and nozzles of the Pelton turbines.

PSE estimated the cost of this long-term redevelopment option to be approximately $75 million. Due to uncertainty around minimum in-stream flows that would be required under the HCP/ITP, PSE modeled the costs and benefits of the long-term life extension with varying minimum in-stream flow requirements of 100 CFS, 130 CFS, and 160 CFS. Any extension of the life of the Electron Project beyond 2026 would also require an agreement with the Puyallup Tribe that extends beyond the term of the existing Resource Enhancement Agreement. It is uncertain whether such an agreement is feasible.

2. Alternative 2: Retirement of the Electron Project

Q. What are PSE's obligations with respect to retirement of the Electron Project?

A. As stated above, the Resource Enhancement Agreement primarily defines PSE's obligations as owner and operator of the Electron Project. The Resource Enhancement Agreement requires PSE to notify the Puyallup Tribe by 2018 of PSE's intent to either upgrade or retire the Electron Project at the end of the agreement term in 2026. Additionally, the Resource Enhancement Agreement contains an early termination provision in the event PSE must "Retire the Project" prior to 2026. (The Resource Enhancement Agreement defines "Retire the Project" as "such actions as Puget shall deem necessary for purposes of permanently discontinuing the generation of electricity at the project and, for such purposes, the removal of the Electron dam from the channel of the Puyallup River.") Upon completion of dam removal and subsequent notice to the Puyallup Tribe, the Resource Enhancement Agreement and associated obligations terminate.

Q. What retirement options did PSE consider?

A. Although the Resource Enhancement Agreement requires removal of only the diversion dam, permanent retirement of the Electron Project would necessarily entail the removal or alteration of additional structures located at the project site to comply with state and local regulations while managing PSE's risk of environmental and public safety liability. PSE identified five project areas that

would need to be addressed in the scope of work for retirement of the Electron Project:

(i) the diversion dam and headworks;

(ii) the flume and settling basin;

(iii) the forebay and surrounding area;

(iv) the penstocks; and

(v) the powerhouse and river-front area.

Each of these is discussed in greater detail below.

Q. What retirement actions did PSE consider for the diversion dam and headworks area?

A. PSE considered the following retirement activities for the diversion dam and headworks:

- demolition and removal of the diversion dam;
- demolition and removal of the intake gate;
- demolition and removal of the rock chutes;
- demolition and removal of the control building; and
- demolition and removal of the fish ladder.

PSE projected that the demolition and removal of all diversion dam and headworks structures would cost approximately $845,000. In such amount, PSE included projected costs for sediment control and monitoring, which PSE assumed would be a requirement of the Clean Water Act Section 404 permit necessary for dam removal.

Q. Does the Resource Enhancement Agreement require the complete demolition and removal of the diversion dam and headworks area structures?

A. The Resource Enhancement Agreement requires the complete demolition and removal of each of the diversion dam, intake gate, rock chutes, and fish ladder as each of these structures is located within the channel of the Puyallup River. Although the Resource Enhancement Agreement does not specifically require removal of the control building, PSE considered its removal because it could be removed at a relatively low incremental cost given that equipment and personnel will already be on site for demolition of the other components. Moreover, removal of the control building would completely clear the diversion dam and headworks area of all structures minimizing public safety liability risks and the need for continued security at the site.

Q. What retirement options did PSE consider for the flume and settling basin?

A. PSE considered the following retirement activities for the flume and settling basin:

- demolition and removal of the flume;
- demolition and removal of the supporting structure; and
- demolition and removal of shacks/platforms.

In such scope of work, PSE included removal and disposal of accessible debris piles along the flume, re-grading of the settling basin using dike material to form a more natural contour, and removal of the settling basin bypass pipe. PSE projected that the demolition and removal of the flume and settling basin would cost approximately $19.2 million.

Q. Did PSE consider options other than complete removal of the flume and settling basin?

A. Yes. In addition to the complete removal of the flume and settling basin, PSE considered options to remove several sections of flume (and shacks) to limit public access. PSE projected that this option—combined with additional gates, fencing, and security measures—would likely cost less than complete removal of the flume and settling basin but decided that this was not the preferred option because such option would subject PSE to continued environmental liability associated with treated lumber in the remaining structure.

Q. What retirement options did PSE consider for the forebay and surrounding area?

A. The forebay area includes a small reservoir supported by concrete and earthen dikes, a gate structure and building used to regulate the volume of water entering the penstocks, a down-stream-migrating fish collection structure, a shop building, and a warehouse/storage building. PSE considered the following retirement and decommissioning activities for the forebay and surrounding area:

- demolition and removal of the gate structure, including the gate house building, wood and concrete inlet structures, concrete walls, footings and foundations;
- breach of the reservoir dikes;
- excavation of dike materials;
- return of the basin to a more natural appearing contour;
- demolition and removal of the fish collection structure; and

- retention of the shop and warehouse/storage buildings in place.

PSE projected that these activities to retire the forebay and surrounding area would cost approximately $1.5 million.

Q. What retirement options did PSE consider for the penstocks?

A. PSE considered the following retirement activities for the penstocks:

- retention of the penstocks in place; and
- installation of concrete plugs in openings at the top of the penstocks.

PSE would plug the penstock openings with concrete to prevent both water and the public from entering them. PSE projected that these activities with respect to the penstocks would cost approximately $307,000.

Q. Why did PSE not consider demolition and removal of the penstocks?

A. PSE determined that demolition and removal of the penstocks would not be necessary as there is little risk that the penstocks could be washed into the river as they deteriorate over time. Additionally, the risk of hillside destabilization and landslides associated with removal of the penstocks likely outweigh any potential environmental issues associated with leaving them in place.

Q. What retirement options did PSE consider for the powerhouse and river-front areas?

A. PSE considered the following retirement activities for the powerhouse and river-front areas:

- removal of hazardous materials from the powerhouse building;
- minor repairs to ensure long-term stability of the powerhouse building;
- boarding up windows and securing entries to the powerhouse building;
- draining oil from and removing the step-up transformer from the site; and
- demolition and removal of the old shop building and office located just down-river from the powerhouse.

PSE projected that these activities to retire the powerhouse and riverfront area would cost approximately $384,000.

Q. Why did PSE not consider the demolition and removal of the powerhouse?

A. Mothballing the powerhouse is significantly less expensive than complete demolition and is likely the preferred alternative from a historic properties standpoint. Once properly secured, the powerhouse building can remain in place with little or no ongoing maintenance, and the risk of unauthorized access by the public would be minimal. PSE determined that it must remove the old shop building and office because potential erosion of the riverbank below those structures may create the potential for those structures to collapse and fall into the river. Removal of the old shop building may also entail remediation for contaminated soil under and around the shop due to years of accumulated oil, grease, and metal cuttings.

Q. Did PSE project any other costs associated with retirement of the Electron Project in addition to those costs listed above?

A. Yes. In addition to the projected costs of retirement activities listed above, PSE also projected the following costs associated with Electron Project retirement:

- management and engineering costs of approximately $2,227,000;
- permitting and related studies and mitigation costs of approximately $490,000;
- legal, real estate, and environmental costs of approximately $557,000;
- PSE overhead costs of approximately $223,000; and
- Allowance for Funds Used During Construction ("AFUDC") of approximately $3,160,000.

Q. What total cost associated with the retirement of the Electron Project did PSE project?

A. PSE projected total costs associated with retirement of the Electron Project of approximately $28.9 million, as shown in the following Table 1:

Table 1 Electron Project Retirement Cost Estimate*

Remove diversion dam and headworks	$845,000
Remove flume and settling basin	$19,195,000
Remove forebay dike and gate structures	$1,536,000
Isolate and secure penstocks	$307,000
Secure and mothball powerhouse	$384,000
Direct demolition/removal cost	**$22,226,000**
Project management/engineering	$2,227,000
Permitting and related studies/mitigation	$490,000
Legal, real estate, and environmental	$557,000
PSE overheads	$223,000
AFUDC	$3,160,000
Total cost of plant shut-down	**$28,922,000**

* Cost estimates shown above include Washington state sales tax

3. Alternative 3: Sale of the Electron Project

Q. Did PSE consider the sale of the Electron Project?

A. Yes. Under this alternative, PSE would sell the Electron Project on an "as-is, where is" basis and purchase the power through a power purchase agreement ("PPA") at competitive market prices. Additionally, PSE evaluated retaining title and/or rights to certain parcels of the Electron Project. PSE assumed that the existing liabilities related to the Resource Enhancement Agreement and HCP/ITP processes would transfer to the buyer.

Q. What benefits of a sale of the Electron Project did PSE identify?

A. PSE identified several benefits of a sale of the Electron Project, including the following:

- sale avoids operational risks and retirement costs;
- sale mitigates potential economic loss of retirement;
- sale transfers HCP/ITP uncertainty and costs to buyer;
- sale transfers Resource Enhancement Agreement obligations to buyer;
- sale transfers debris removal obligations to buyer; and
- if a sale is unsuccessful, other options remain available.

C. Quantitative Analysis of the Electron Project Alternatives

Q. Did PSE perform a quantitative analysis of the Electron Project alternatives?

A. Yes. PSE's Resource Acquisition team evaluated the potential rebuild and sale of the Electron Project on a quantitative basis. PSE then compared the financial benefits and costs with other generation alternatives received in response to the 2011 Request for Proposal (the "2011 RFP"). Please see the Prefiled Direct Testimony of Mr. Michael Mullally, Exhibit No. ___(MM-1HCT), for a discussion of the quantitative analysis of the Electron Project alternatives.

D. EMC Decision: Proceed With a Sale of the Electron Project

Q. What alternative did the EMC decide to pursue with respect to the Electron Project?

A. At the meeting, dated April 20, 2012, the EMC approved the recommendation to solicit offers for the purchase of the Electron Project. Please see Exhibit No. ___(PKW-10C) for a copy of the presentation to the EMC on April 20, 2012.

E. Request for Proposal Process for the Sale of the Electron Project

Q. How did PSE approach the potential sale of the Electron Project?

A. PSE solicited offers from potential buyers through a competitive bidding process with selected buyers. Please see Exhibit No. ___(PKW-12C) for a copy of the Request for Proposals for the Electron Project (the "Electron RFP"). In the Electron RFP, PSE notified prospective buyers of the bid process and expected timeline. PSE gave potential bidders a specific amount of time to perform initial due diligence and complete their valuations. PSE also established a data room that provided all potential bidders with access to the same information and materials. After the initial due diligence phase was complete, PSE asked potential bidders to submit their best offers based on PSE's preferred commercial terms and conditions. PSE evaluated submitted offers on both qualitative and quantitative selection criteria.

Q. How many offers did PSE receive in response to the Electron RFP?

A. PSE received offers in response to the Electron RFP from the following four bidders: (i) [redacted]; (ii) [redacted]; (iii) [redacted]; and (iv) Valtec Power, LLC.

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Q. Please describe the offer submitted by [redacted] in response to the Electron RFP.

A. In response to the Electron RFP, [redacted] submitted an offer for the purchase of the Electron Project at a purchase price of $[redacted] million, with a [redacted] PPA (with a [redacted] renewal option) at a price of $[redacted]/MWh. [redacted]

[redacted] offered $[redacted] to PSE payable upon notification of the award, with the remaining $[redacted] million payable at closing. Please note that [redacted] and is not the same entity as Electron Hydro, which is a Delaware limited liability company and is purchasing the Electron Project.

Q. Please describe the offer submitted by [redacted] in response to the Electron RFP.

A. [redacted] submitted an offer for the purchase of the Electron Project at a purchase price of $[redacted] million, with a [redacted] PPA at a price based on [redacted].

Q. Please describe the offer submitted by [redacted] in response to the Electron RFP.

A. Snohomish PUD submitted an offer of $[redacted] for [redacted] the Electron Project. The offer did not include any requirement for the sale of power from the Electron Project to PSE. After conducting additional due diligence, [redacted] withdrew its offer.

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Q. Please describe the offer submitted by Valtec Power, LLC in response to the Electron RFP.

A. Valtec Power, LLC submitted an offer for the purchase of the Electron Project at a purchase price of $[redacted] million, with a PPA that would expire [redacted], (with [redacted] renewal options) at a price of $[redacted]/MWh, which escalated [redacted] percent annually. Valtec Power, LLC offered all cash, payable in

full at closing. Valtec Power, LLC was selected as the winning bidder. Subsequent to being selected, Valtec Power, LLC formed Electron Hydro, a Delaware limited liability company, to purchase the Electron Project.

Q. As a result of the bidding process what was the offer selected in the bidding process?

A. As a result of negotiations, PSE agreed to sell and Electron Hydro agreed to purchase the Electron Project at a purchase price of $13.7 million, with a twenty-year PPA at a price of $[redacted]/MWh, which escalates [redacted] percent annually.

The price drop resulted after Valtec Power, LLC met with the Puyallup Tribe. It became clear that the Puyallup Tribe would not allow a straight transfer of the Resource Enhancement Agreement.

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Q. Please describe the evaluation process for the Electron Hydro bid.

A. PSE evaluated the Electron Hydro bid in multiple ways. First, the sale of the Electron Project (i) avoided projected costs associated with retirement of the Electron Project of approximately $28.9 million and (ii) provided cash inflows associated with the purchase price of $13.7 million. Additionally, PSE analyzed the Electron PPA as a standalone item with the PSM III model (the "Optimization Model"). Although prices for the Electron PPA are slightly higher than the prices in the Coal Transition PPA, the Optimization Model chose the Electron PPA along with other smaller resources to meet PSE's needs and delay by several years the build-out of generic natural gas-fired peaking plants. Please see the Prefiled Direct Testimony of Mr. Michael Mullally, Exhibit No. ___(MM-1HCT),

for a discussion of the quantitative analysis of the Electron PPA as a standalone item with the Optimization Model.

Q. Did the EMC authorize the sale of the Electron Project to Electron Hydro?

A. Yes. On March 21, 2013, the EMC authorized the sale of the Electron Project to Electron Hydro. Please see Exhibit No. ___(PKW-13C) for a copy of the presentation made to the EMC on March 21, 2013.

F. Terms and Conditions of the Asset Purchase Agreement for the Electron Project

Q. Did PSE and Electron Hydro negotiate an agreement for the sale of the Electron Project from PSE to Electron Hydro?

A. Yes. PSE and Electron Hydro began negotiations in November 2012 for the potential sale and purchase of the Electron Project. PSE and Electron Hydro have reached agreement on the main commercial terms for PSE's acquisition of the Electron Project, and PSE expects that the agreement for sale will close in the second quarter of 2013. PSE will provide supplemental testimony regarding the final terms of the agreement for sale (along with copies of the final agreement for sale) after the parties have executed such agreement.

Q. What asset purchase price did PSE and Electron Hydro negotiate for the sale of the Electron Project?

A. PSE and Electron Hydro agreed upon an asset purchase price of $13.7 million for the sale of the Electron Project.

G. Terms and Conditions of the Electron PPA

Q. What product does PSE propose to purchase under the terms of the Electron PPA?

A. Under the Electron PPA, PSE will purchase the entire net electrical output of the Electron Project (i.e., the total electrical energy output of the Electron Project reduced by any amounts of electric power and energy used in connection with the operation of the Electron Project and losses, if any, from the Point of Delivery to the meters) during the operating period. Please see the Prefiled Direct Testimony of Mr. Michael Mullally, Exhibit No. ___(MM-1HCT), for a discussion of the Electron PPA.

Q. What does PSE request of the Commission?

A. PSE requests recovery of the remaining costs of the Electron Project and a prudence determination for the purchased power agreement for the output of the Electron Project (the Electron PPA).

VI. PRODUCTION OPERATIONS AND MAINTENANCE COSTS

Q. How has PSE prepared its forecast of hydroelectric and wind production operations and maintenance expense for the rate year?

A. PSE developed the rate year production O&M expense in accordance with the 2011 GRC Order, utilizing October 2011 through September 2012 test year data and making certain pro forma adjustments as previously allowed by the Commission.

Q. What is PSE's forecast of hydro and wind production O&M for the rate year?

A. Rate year production hydro O&M costs are forecast to be $14.2 million, a decrease of $3.7 million from the 2011 GRC hydro production O&M costs of $17.9 million. Rate year production wind O&M costs are forecast to be $31.9 million, an increase of $1.0 million from the 2011 GRC wind production O&M costs of $30.9 million. Please see Exhibit No. ___(LEO-3C) for the rate year production O&M costs. Please see the Prefiled Direct Testimony of Mr. L. Edward Odom, Exhibit No. ___(LEO-1CT), for a discussion of production O&M for the gas-fired generators.

A. Hydro Production O&M Costs

Q. Please summarize the hydro O&M costs.

A. Please see Table 2 below for a summary of hydro O&M costs.

Table 2. Hydro O&M Costs

Resources	2011 GRC	Test Year 10/1/11 - 9/30/12	Adjustments	2013 PCORC 9/1/13 - 8/31/14	2013 PCORC vs. 2011 GRC
Lower Baker	$5,653,795	$5,087,915	$245,380	$5,333,295	$(320,500)
Upper Baker	$1,053,605	$2,338,297	-	$2,338,297	$1,284,692
Baker Licensing	$4,927,789	$2,817,066	$818,467	$3,635,532	$(1,292,257)
Electron	$3,735,078	$3,540,667	$(3,540,667)	-	$(3,735,078)
Snoqualmie	$1,849,780	$1,941,778	$316,646	$2,258,424	$408,645
Snoqualmie Licensing	$644,719	$349,144	$293,766	$642,910	$(1,809)
White River	-	-	-	-	-
Hydro Total O&M	**$17,864,766**	**$16,074,867**	**$(1,866,409)**	**$14,208,459**	**$(3,656,307)**

Q. What is the nature of the adjustments PSE's has made to test year hydro production O&M expense?

A. PSE has made several adjustments to test year hydro production O&M as discussed below:

(i) added $0.2 million to test year O&M to reflect the addition of two hydro journey worker positions at Lower Baker Generating Station to support O&M for Lower Baker Unit 4 (new generation);

(ii) added $1.1 million to test year O&M costs to reflect rate year FERC relicensing costs associated with the Baker Project and the Snoqualmie Falls Project;

(iii) reduced test year O&M $3.5 million to remove O&M associated with the Electron Project which will be removed from service in June 2013; and

(iv) added $0.3 million to test year O&M to reflect normal operation staffing level at the Snoqualmie Falls Project. Snoqualmie staff had been reassigned to Electron and White River during the test year as the Snoqualmie plant was off-line while improvements associated with the FERC license renewal were implemented.

Q. What is the nature of the adjustment to hydro O&M for the Electron Project?

A. The production O&M decrease is attributed to the expected sale of the Electron Project in June 2013 discussed above. The Electron Project will not be in service during the rate year.

Q. Please describe the labor adjustment for the Snoqualmie Falls Project production O&M.

A. Staffing requirements at the Snoqualmie Falls Project during the test year were less than required during normal operations; accordingly, Snoqualmie personnel

were reassigned to support activities at other facilities. As the Snoqualmie Falls Project will be available for generation during the rate year, the reassigned personnel will return to the Snoqualmie Falls Project to support normal generation operations. The adjustment is to reinstate $0.2 million of Snoqualmie Falls Project personnel test year labor that was charged to Electron O&M during the test year and $0.1 million to reflect labor cost associated with the instrument, controls & electrical (ICE) technician position to support the new generation.

Q. Please describe the labor adjustment for Lower Baker Project production O&M.

A. Lower Baker Unit No. 4 will be placed in service in June 2013. This unit represents new generation added subsequent to the test year. Baker Project test year O&M was increased $0.2 million to reflect rate year labor associated with two journeyman positions added in early 2013 to support this new generation.

Q. Please describe the adjustment to reflect rate year FERC relicensing costs associated with the Baker Project and the Snoqualmie Falls Project.

A. The increase in test year O&M licensing costs are a result of pro-formed costs to reflect the budgeted licensing O&M costs during the rate year. This is consistent with the treatment in the 2011 GRC.

B. Wind Production O&M Costs

Q. Please summarize the wind O&M costs.

A. Please see Table 3 below for a summary of wind O&M costs.

Table 3. Wind O&M Costs

Resources	2011 GRC	Test Year 10/1/11 - 9/30/12	Adjustments	2013 PCORC 9/1/13 - 8/31/14	2013 PCORC vs. 2011 GRC
Hopkins Ride + Expansion	$6,945,862	$6,732,323	$646,102	$7,378,425	$432,563
Wild Horse	$11,485,619	$11,335,787	$582,718	$11,918,504	$432,885
Wild Horse Exp.	$1,577,517	$1,578,623	$13,373	$1,591,996	$14,479
Lower Snake River	$10,891,023	$5,910,744	$5,054,068	$10,964,812	$73,790
Wind Total O&M	**$30,900,021**	**$25,557,477**	**$6,296,260**	**$31,853,738**	**$953,717**

Q. What is the nature of the adjustments PSE's has made to test year wind production O&M expense?

A. PSE has made some adjustments to test year wind production O&M that total the $6.3 million, as discussed below:

(i) added $5.3 million to test year wind production O&M expense to reflect projected rate year contract maintenance and royalty costs under the Vestas/Siemens maintenance contracts and royalty contracts for the Hopkins Ridge, Wild Horse/Wild Horse Expansion and Lower Snake River Phase I wind projects based upon projected rate year wind generation; and

(ii) added $1.0 million to test year O&M to reflect projected rate year other production O&M costs for the LSR Phase 1 wind facility. The LSR facility was placed in service in late February of 2012 and was operational for only seven months during the test year. The adjustment used a pro forma expense based upon the actual other production O&M expense for the twelve months ending February 2013.

Q. Are there any notable additions or proposals to the rate year production O&M as compared to the 2011 GRC?

A. No. The proposed adjustments are consistent with adjustments made in the 2011 GRC.

Q. How is routine and corrective maintenance provided for the wind turbines?

A. PSE's wind turbines are maintained by the manufacturer, Vestas, in accordance with the terms of five-year service agreements. PSE has three service agreements in place—one each for Hopkins Ridge, Wild Horse, and the Wild Horse Expansion. The wind turbines at the Lower Snake River Phase I project were placed in service beginning in February of 2012. Siemens has been contracted to provide all maintenance services at the Lower Snake River Phase I facility. The term of the initial contract terminates after five years following turbine commissioning on February 29, 2012.

Q. Please explain PSE's proposed adjustment to wind royalty expense.

A. Wind turbine production royalties represent variable dollar per MWh fees paid under contract to project stakeholders. These fees are based on the actual generation of PSE's wind turbines. Consistent with the 2011 GRC Order, PSE has pro formed the royalty costs based upon the wind generation included in the rate year power portfolio. In this regard, the rate year royalty expense for PSE's wind facilities have increased to $6.7 million for the 2013 PCORC rate year as compared to $6.5 million for the 2011 GRC rate year for a rate year to rate year increase of $0.2 million.

Q. Do the wind turbine production royalty payments reflect contract increases?

A. Yes. In accordance with the terms of PSE's development and land lease agreements with project stakeholders, the annual royalty rate paid per MWh of energy production is subject to an annual adjustment for inflation.

VII. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.