Exh. CRM-2
Dockets UE-190529/UG-190530 and UE-190274/UG-190275 (*consolidated*)
Witness: Chris McGuire

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY,** **Respondent.**	**DOCKETS UE-190529 and UG-190530 *(consolidated)***
In the Matter of the Petition of **PUGET SOUND ENERGY** **For an Order Authorizing Deferral Accounting and Ratemaking Treatment for Short-life UT/Technology Investment**	**DOCKETS UE-190274 and UG-190275 (*consolidated*)**

EXHIBIT TO TESTIMONY OF

Chris McGuire

STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

PSE's Annual Colstrip Report, November 30, 2018

November 22, 2019

ANNUAL COLSTRIP REPORT

ON DECOMMISSIONING AND REMEDIATION

PUGET SOUND ENERGY
DOCKETS UE-170033 AND UG-170034
(CONSOLIDATED)

NOVEMBER 30, 2018

BACKGROUND

Pursuant to paragraph 119 of the Multiparty Settlement Agreement approved in Dockets UE-170033 and UG-170034 (consolidated), Puget Sound Energy ("PSE") submits this Annual Colstrip Report on Decommissioning and Remediation. The intent of this report is to provide an annual update to the Commission on Colstrip's status, provide PSE's most recent estimates for retirement dates, future decommissioning and remediation costs, and detail the sufficiency of the retirement account established pursuant to RCW 80.84.020. Additionally, this report will provide updates regarding the sufficiency of the depreciation rates for Colstrip Units 3 and 4, and any updates to decommissioning and remediation costs related to those units. In those years where an IRP is filed, the report will also include information regarding replacement power costs.

DEFINITIONS

Decommissioning and remediation can be interpreted differently by different parties. In an effort to provide clarity and mutual understanding, PSE will refer back to definitions used in previous proceedings to set a level of understanding as to how we are using the terms.

Decommissioning – In the 2017 PSE general rate case, PSE shared its interpretation of "decommissioning" generally as the estimate of costs to suspend operations, and remove some or all of the above grade structures associated with Colstrip Units 1 & 2, followed by reasonable restoration in these areas.

Remediation – In the "Written Comments of Puget Sound Energy on the issues Identified and Addressed in the Nine Questions Presented in the Commission Notice, Dated July 21, 2015", PSE defines remediation as, "additional requirements (state or federal) associated with soil or groundwater. These requirements may be a function of (i) environmental laws or regulations not yet promulgated, (ii) amendments to existing laws or regulations that require greater stringency for certain constituents associated with the operation of Colstrip Units 1 & 2, (iii) accidental leaks or spills that have not yet been identified, (iv) litigation, and/or (v) state or federal negotiated or mandated requirements."

PSE continues to use the above definitions in providing information for this report and considers these same definitions to apply to Colstrip Units 3 & 4. Essentially, decommissioning is related to the above grade structures of Colstrip. Remediation relates to addressing the legal requirements of the environmental impact related to Colstrip operation.

Decommissioning –

There are currently no laws or regulations related to the shut down or removal of the physical structures of Colstrip.

In the 2017 PSE general rate case, PSE presented the results of a study by HDR Consulting that provided three scenarios for decommissioning of Colstrip Units 1 and 2; those estimates ranged from the low end of approximately $293,000 to a high of $8.1 million. In this report PSE will discuss its updated estimates for decommissioning below in question iii.

Remediation –

An Overview of the Standard Remediation Process

Remediation projects, whether they are managed within the federal Superfund program or a State led program, follow a set process that was originally developed as part of the Federal Superfund program. The core of the program and process are the Remedial Investigation ("Investigation"), Feasibility Study ("Study") and Engineering & Design ("Design") phases. During the Investigation phase, the nature and extent of contamination is determined through the performance of soil and groundwater investigations. The information obtained through those investigations is used to identify cleanup criteria based on the chemicals of concern, the areas and medium affected by those chemicals, the concentrations of the chemicals and any existing or potential receptors that could be impacted by the chemicals. The Study phase builds upon the information developed as part of the Investigation phase and identifies technologies that are capable of addressing the contamination as well as the potential costs with the ultimate goal of identifying a Preferred Alternative that is agreed upon by the regulatory agency. At this point, the level of design is typically 5 to 10% which results in the cost estimates being high level and subject to change. Upon the completion of the Investigation and Study phases, the agency will typically direct the performing party to proceed with the next step which is the Engineering & Remedial Design. During this stage, the primary focus is the engineering and design of the Preferred Alternative as well as identification and completion of potential additional investigation needed in support of the design stage. Final design, permitting and contracting eventually provide greater clarity as to what the final cost will be.

In PSE's 2017 general rate case, cost estimates for compliance with the Coal Combustion Residuals Rule ("CCR or Rule") were provided in a report from Geosyntec Consultants ("Master Plan")[1]. Although the Colstrip owners had not yet entered into the Investigation phase of remediation, it was important to understand the potential impacts of the CCR and the Montana Administrative Order on Consent ("AOC" or "Order"). The Master Plan was compiled in order to provide an order of magnitude for what

[1] See Exh. RJR-24 in Docket UE-170033.

compliance with the new regulations might entail. At the time the Master Plan was developed, it was still early in the process and the manner under which Colstrip owners could comply with CCR was just being determined. Since the general rate case, further work related to Units 1 and 2 along the lines of the Investigation phase of the standard remediation project has been performed as described in more detail below. Accordingly, the Master Plan is no longer the sole most updated source of cost estimates.

The Process of Remediation as it Relates to Colstrip

Remediation work at Colstrip is driven by two regulations, the Federal Environmental Protection Agency's ("EPA") Coal Combustion Residuals Rule and the Montana Administrative Order on Consent.

CCR

The CCR was published by EPA on April 17, 2015 and became effective October 19, 2015. The Rule's intent is to regulate coal combustion residuals under the Resource Conservation and Recovery Act, Subtitle D. The CCR rule addresses the risks from coal ash disposal and sets out recordkeeping and reporting. In 2016 the U.S. Senate passed legislation altering the CCR. The CCR was also challenged in the Courts and the recent ruling will require additional rework of the CCR. Although the final impacts of the CCR are not known at this time and are subject to change, the Colstrip owners and operators are currently operating under the existing rule as it relates to remediation assumptions and estimates.

AOC

The AOC addresses impacts to groundwater from Colstrip. It was entered into in 2012 by Talen MT as operator of Colstrip (formerly PPL MT) and the Montana Department of Environmental Quality ("MDEQ"). It provides an extensive process for determining groundwater impact and assessing previous work to address impacts, as well as, laying out standards for addressing contamination and evaluating options for ultimate clean-up. The Order provides a process for investigation and for the development of reports and plans necessary for the remediation of Colstrip. The Order provides that investigations are overseen by the MDEQ and it is the MDEQ that will ultimately review and approve all reports and plans. The AOC splits Colstrip environmental impact into the following three areas for working purposes:

1. the Plant site (includes the area near the physical plant structures, some of which are common structures for Units 1-4),
2. Units 1 and 2, and
3. Units 3 and 4.

A synopsis of the process from the MDEQ website (http://deq.mt.gov/DEQAdmin/mfs/ColstripSteamElectricStation) is provided below[2].

- *Step 1: First, Talen Energy must prepare "Site Characterization Reports" for each of the three areas that describe the existing conditions, including the extent of the contamination. The reports must also describe what has been done so far to address the contamination, and how effective those measures have been in remediating the contamination.*
- *Step 2: Next, Talen will prepare Cleanup Criteria and Risk Assessment Reports. These reports will identify the standards that PPL Montana will have to achieve in its remediation of the contamination.*
- *Step 3: Finally, Talen must prepare Remedy Evaluation Reports, which will evaluate different options for remediation of the contamination.*
- *DEQ will use the Remedy Evaluation Reports to select a remediation plan for Talen Energy, who will be required to submit final designs based on that plan. After DEQ approves the final plans, Talen will be required to implement the selected remediation.*

Additionally MDEQ requires a Facility Closure Report Plan ("Closure Plan") for each of the three identified environmentally impacted areas. The Closure Plan relates to the "post-closure escape" of contaminants and must provide an estimate of closure and post closure costs. Plans for all three areas were submitted to MDEQ by Colstrip in 2017; however none of the Plans have received final approval as of the date of this report. In practice, the estimates within each Closure Plan are assumed and updated in the Remedy Evaluation Reports which provide more detail to address clean-up.

As of the writing of this document only, the Remedy Evaluation Report for the Plant Site area has been approved by MDEQ. The Unit 1 and 2 Report has been rejected by MDEQ and is undergoing more work for resubmittal. The Unit 3 and 4 Report was granted an extension for filing by MDEQ and is due December 15, 2018.

[2] The original operator of the Colstrip plant was Montana Power Company. In 1999, PPL purchased the Montana Power ownership portion of Colstrip and took over the operator role. In 2015 PPL restructured their assets and created Talen Energy which then assumed the operational role at Colstrip. Talen Energy has since had an ownership change but still remain operator at Colstrip in the form of Talen Montana.

The plan submission is as follows –

Report	Initial Filing to MDEQ	MDEQ Approval/Rejection
Plant Site Closure Report	August 2017	
Units 1-2 Closure Report	August 2017	
Units 3 - 4 Closure Report	August 2017	
Plant site Remedy Evaluation	September 2016	October 2018; Approved Alt 4
Units 1-2 Remedy Evaluation	May 2018	August 2018; Rejected all 4 alternatives
Units 3-4 Remedy Evaluation	December 2018	

Remediation plan status

PSE's 2017 general rate case included estimated remediation requirements for Colstrip Units 1 and 2 which were based on the Master Plan discussed above. At the time, the cost estimate to address PSE's share of Units 1 and 2 remediation was approximately $75 million in 2016 dollars. These costs were estimated to occur beginning in 2016 and ending in 2051. To calculate the projected costs PSE would actually incur in each of those years, PSE adjusted the dollars by an annual inflation rate of 2.50%, which resulted in approximately $103 million of estimated remediation costs for Units 1 and 2 based on the study.

The Master Plan took into account the assumed factors at that time, resting most heavily on working towards compliance with the then fairly new CCR. At the time of the 2017 general rate case the vast majority of the work around developing Montana AOC implementation plans and reports had not yet been done, and as discussed, approval of those plans remains in process.

As the AOC plans and reports have developed, the remedial actions in those documents have assumed the majority of the work necessary to comply with the federal EPA CCR. Therefore PSE believes the AOC plans are the most comprehensive documents to reference in order to capture the current costs estimates of remediation for this report. In question iii of this report, answered below, we provide the cost estimates based on the Montana AOC.

Colstrip Reporting Requirements

PSE provides the following responses to the specific questions outlined in the settlement agreement:

(i) [T]the most recent estimate of the actual retirement date for Colstrip Units 1 and 2 and Colstrip Units 3 and/or 4.

PSE and Talen Montana ("Talen") are 50 percent partners in Units 1 and 2 and are currently planning for retirement of Colstrip Units 1 and 2 on or before July 1, 2022. This date was identified in the 2016 Settlement between the Sierra Club and the Montana Environmental Information Center, and the joint Colstrip owners to retire Colstrip Units 1 and 2.

The specific day of retirement of Units 1 and 2 will depend on various economic factors such as; fuel supply, fuel pricing, general energy market pricing, availability of replacement power, as well as the operational condition of the Units. PSE is continually evaluating the units and their economics within the portfolio of generation options available to PSE, in the interest of providing customers with the lowest reasonable cost generation supply. Additionally PSE must work with Talen, as equal owners, under the Ownership and Operating ("O&O") Agreement to determine a mutually agreeable calendar date for retirement.

Colstrip Units 3 and 4 do not have an identified retirement date at this time. The Units are jointly owned by six independent entities and the Unit 3 and 4 O&O Agreement is largely silent on the project's retirement process. Under ongoing operations each owner must provide their share of coal to run the units as long as one owner requests generation from the Units. The term of the agreement runs as long as the project is capable of providing electricity. Finally, the only direct reference to the cessation of the project is when it is no longer capable of producing electricity; however no criteria or process is set out to determine when that point occurs. Consequently, past interpretation of the agreement has been that all owners must unanimously agree to Units 3 and 4 final retirement date.

(ii) In the event of an estimated retirement date earlier than July 1, 2022, for Colstrip Units 1 and 2, and upon the determination by PSE of an estimated retirement date for Colstrip Units 3 and/or 4, a discussion and evaluation of consequences to customers arising from those estimated retirement dates.

As previously stated in response to question (i) PSE and Talen are planning for the retirement date of Units 1 and 2 to coincide with the "on or before July 1, 2022" date. Regardless of the date chosen to retire Units 1 and 2, PSE continues to evaluate the units and their economics within the portfolio of generation options available to the company, in the interest of providing customers with the lowest reasonable cost generation supply.

Regarding Colstrip Units 3 and 4, PSE cannot unilaterally determine a retirement date for the project and at this time there are no discussions under the O&O Agreement to set a retirement date for the Units. Therefore, it is premature for PSE to discuss and evaluate consequences for a retirement date that is unknown.

In addition to continuing to evaluate cost and reliability for customers, PSE is also monitoring other risk factors. Those include two legal actions currently in process.

Talen MT has filed litigation in the State of Montana seeking compensation from PPL Montana from whom they purchased their ownership interest in Colstrip. PSE will be monitoring the litigation to understand how or if it will affect the financial position of Talen MT in relation to their ownership interest in Colstrip.

The second legal action involves Westmorland, the parent company of Western Energy, who operates the mine supplying Colstrip with their coal fuel. Westmorland has filed Chapter XI bankruptcy proceedings. PSE has joined with other Colstrip co-owners in hiring legal counsel to engage in the process.

(iii) [D]ecommissioning and remediation expenditures associated with Colstrip units since the time of the last report and updated estimates of future costs.

As of September 30, 2018, remediation expenditures recorded against the Units 1 and 2 retirement account were $16,186. Remediation expenditures recorded for Colstrip 3 and 4 for the same time period are $4,544,055. The expenditures for units 3 and 4 are primarily related to design and construction work related to water management systems to address environmental impacts and eventual Unit retirement.

The following addresses PSE's current estimates of future decommissioning and remediation costs for the Colstrip Units.

Decommissioning –

PSE and Talen are currently in the due diligence process of determining an updated plan for the decommissioning of the physical buildings and equipment related to Units 1 and 2 retirement. A common goal has been established of bringing the Units to a cold, dark, dry and safe state until the retirement of Units 3 and 4. To that end, a contractor has been engaged to provide estimates and options to meet the stated goal. At this time, final costs estimates are premature as not all necessary factors or decisions have been made about the specifics of decommissioning. PSE believes that if the scope of the decommissioning were to remain similar to the 2016 HDR Engineering Report[3], the estimate provided of $6.7 million in real dollars[4] is still within a valid range. PSE has not incurred any decommissioning costs as of September 30, 2018.

Given the fact there is no identified retirement date for Colstrip Units 3 and 4 there has been no estimate for decommissioning of the physical structures of that portion of the facility.

Remediation –

The Plant Site Remedy Evaluation Report discussed above has been approved by the MDEQ. The next step will be for Talen MT to design a Remedial Design/Remedy Action Work Plan that will refine the work process and cost estimates needed to implement remedy actions. The total estimated cost for the Remedy Evaluation report for the Plant site is $93,133,165 in 2018 dollars. PSE's share of the obligation is $33,708,537 and of that $ 20,850,492 is allocated to Units 1 and 2 and $12,858,046 is related to Units 3 and 4. When adjusted for inflation, PSE's share of the estimated costs total $44,167,309, with $27,001,429 and $17,165,881 allocated to Units 1 and 2 and Units 3 and 4, respectively. Attachment A to this report provides the breakdown by year of these cost estimates.

For Units 1 and 2, all four alternatives of the Remedy Evaluation Report were rejected by MDEQ in October 2018. However, the cost associated with Alternative 4, which represented the highest cost estimate was $61,895,600 (in 2018 Dollars) of which PSE would be responsible for 50 percent, or $30,947,800. When adjusted for inflation, the total cost is estimated at $81,873,078, with PSE's share totaling $40,936,539. Talen and PSE assume the final approved Remedy Evaluation Report to address the environmental impacts of Units 1 and 2 will likely be higher than this estimate although how much higher is not known at this time. Attachment A also includes details for these estimates.

The Units 3 and 4 Remedy Evaluation Report will not be filed until December 15, 2018. In lieu of estimates from the remedial evaluation, PSE reverts to the pending Units 3 and 4 Closure Report estimates that have been filed with the MDEQ. Based on the information contained in the closure report, the estimated costs for Units 3 and 4 pond remediation is approximately $58,329,000 (in 2018 Dollars) of which PSE would be responsible for approximately $14.5 million. When adjusted for inflation, the total costs are estimated at $78.4 million, with PSE's portion being approximately $19.6 million.

[3] *See* pages 43 through 48 of the prefiled direct testimony of Mr. Ron J. Roberts, Exh. RJR-1CT including Exhs. RJR-20 through RJR-23 in Docket No. UE-170033.
[4] *See* Line 5 on page 47 of Exh. RJR-1CT in Docket No. UE-170033.

The following tables summarize PSE's estimated future remediation costs associated with Units 1 and 2 and Units 3 and 4.

Summary of Units 1&2 Decommissioning & Remediation Estimate
PSE's Share

	Current Dollars (note 1)	Inflation Adj @ 2.5%
Decommissioning	$ 4,226,072	$ 6,695,878
Plant Site Remediation	20,850,492	27,001,429
Units 1 and 2 Remediation	30,947,800	40,936,539
Total	$ 56,024,363	$ 74,633,846

Note 1: Current Dollars for Decommissioning amounts are in 2016 Dollars; Current Dollars for Remediation costs are in 2018 Dollars

Summary of Units 3 &4 Decommissioning & Remediation Estimate
PSE's Share

	Current Dollars (note 1)	Inflation Adj @ 2.5%
Decommissioning	N/A	N/A
Plant Site Remediation	$ 12,858,046	$ 17,165,881
Units 3 and 4 Remediation	14,582,266	19,593,818
Total	$ 27,440,312	$ 36,759,698

Note 1: Current Dollars for Remediation costs are in 2018 Dollars

N/A-- Not available

(iv) [A]n evaluation of the sufficiency of the retirement account established pursuant to Chapter 80.84 RCW to fund and recover decommissioning and remediation activities for Colstrip Units 1 and 2.

The retirement account established pursuant to Chapter 80.84 RCW contains $95.9 million of funding available to address Colstrip Units 1 and 2 decommissioning and remediation activities. At this time, based on the summarized costs above, the retirement account is estimated to be sufficient to address Units 1 and 2 decommissioning and remediation costs.

(v) [A]n evaluation of the sufficiency of existing depreciation rates for Colstrip Units 3 and 4 to cover decommissioning and remediation costs for those units.

Under traditional ratemaking, depreciation rates are designed to recover both the cost of the asset as well as the cost of removal. At this time, the currently approved depreciation rates, when projected through December 2027, appear to provide over-depreciation of Units 3 and 4 by $19.2 million to address cost of removal. This estimate assumed no capital additions or interim retirements through 2027. Therefore, based on this hypothetical scenario, it appears at this time that there is sufficient depreciation to cover the net book value of the plant as well as a portion of the remediation costs shown above. Under this scenario, it shows that approximately $17.6 million ($36.8 less $19.2) of the remediation costs estimated in this report would need to be funded from the Production Tax Credit ("PTC") retirement account.

(vi) [F]or years in which PSE issues an Integrated Resource Plan, updated replacement power costs.

This is not a year in which PSE is issuing an Integrated Resource Plan; therefore, this section is not applicable for this initial Annual Colstrip Report on Decommissioning and Remediation.