



Investigation Report

Investigation of coal-fired generating unit
decommissioning and remediation costs

UE-151500

I. Executive Summary

In July 2015, the Washington Utilities and Transportation Commission (“Commission” or “UTC”) initiated an investigation into the decommissioning and remediation costs associated with Colstrip Units 1 & 2, owned in part by Puget Sound Energy (PSE), a regulated utility serving customers in Washington.¹ The Commission limited the investigation’s scope to the decommissioning and remediation costs of Colstrip Units 1 & 2 at various stages prior to the end of their useful lives. Current depreciation schedules for Units 1 & 2 extend to 2035.

As part of this investigation, the Commission requested that Staff review PSE’s estimated costs associated with necessary environmental remediation, other expenditures related to plant retirement, and the amount of funds currently held by PSE for the purpose of decommissioning Colstrip Units 1 & 2. This Staff investigation report provides a review of the preliminary information obtained in this docket, including background information regarding the accounting treatment of decommissioning and remediation costs for Colstrip Units 1 & 2, as well as a summary of the expected costs of decommissioning and known remediation obligations, as currently estimated by PSE.² It also provides Staff’s summary of responses from interested parties on these issues.

PSE has an obligation to provide this Commission and its Staff with the most recent and accurate information in its possession upon request. The company provided the information in this docket in response to informal requests, and without a protective order or confidentiality agreement. This report also contains information which falls substantially under the authority of the Montana Department of Environmental Quality (MDEQ). Staff has relied heavily on publicly available information on MDEQ’s website, but MDEQ did not participate in this investigation, nor did Staff consult an independent third party with expertise in coal plant decommissioning or groundwater issues.

Unlike a formal proceeding, information and comments received in this docket should not be construed as testimony, as Staff did not have the ability to audit, verify, or dispute the information provided. While this investigation allowed other parties who normally intervene in general rate case proceedings to file comments, it did not provide a process for them to formally request information from the company for their own review, or cross-examine those providing the information.

As such, this report is a preliminary review of these issues, and should not be considered a final analysis of the estimated costs or a determination of a closure date. This report is intended only to provide the Commission, the interested parties, and the legislature with an informed view of PSE’s expected costs of decommissioning and known remediation requirements for Colstrip Units 1 & 2, as Staff understands them at this time, and the current accounting treatment of funds

¹ Notice of Opportunity to File Written Comments: Investigation of Coal-Fired Generating Unit Decommissioning and Remediation Costs, Docket UE-151500, (July 21, 2015).

² As noted above, the information and expected costs summarized in this report are based on Staff’s current understanding of the forecasted conditions, circumstances, costs, and legal framework associated with the decommissioning and remediation of Colstrip Units 1 & 2. The actual facts and costs of the decommissioning and remediation of these units cannot be precisely determined at this time.

designated for these purposes. It is also not intended to prejudge any issues which may come before the Commission in future proceedings.

PSE has provided its estimated costs for decommissioning and known remediation obligations associated with Colstrip Units 1 & 2. As used by PSE in its comments, “decommissioning” includes actions required to suspend operations and remove above-ground plant structures, and “remediation” includes measures required to comply with environmental regulations affecting soil and groundwater at the site.

Currently, PSE states that it is under no legal obligation to decommission plant structures. PSE projects that the cost of decommissioning Colstrip Units 1 & 2 is approximately \$49.7 million.³ The company states that its share of these expected decommissioning costs is currently 50 percent, or \$24.9 million. In addition, PSE has identified two known legal requirements for groundwater remediation at Colstrip Units 1 & 2, projecting remediation costs of \$85 million to \$142.7 million.⁴ PSE states that its share of these remediation costs is currently 50 percent, or \$42.5 to \$72.5 million. Staff assumes that Talen Energy Montana (Talen), the merchant operator that owns the remaining 50 percent of Colstrip Units 1 & 2, is responsible for the remainder of decommissioning and remediation costs. Under these assumptions, PSE has projected a range of decommissioning and remediation costs from \$67.4 to \$97.4 million.⁵ According to PSE’s projections, the cost associated with remediation obligations will increase the longer the plants continue to operate.⁶

Staff requested PSE’s best estimate of costs given the information known at this time. Staff notes that significant uncertainty exists about the timing and magnitude of the estimated retirement obligations cited by PSE in this investigation. For example, PSE identifies the following five categories of uncertainties which could affect decommissioning and remediation requirements in the future:

- (1) Environmental laws or regulations not yet promulgated,
- (2) Amendments to existing laws or regulations that require greater stringency for certain constituents associated with the operation of Colstrip Units 1 & 2,
- (3) Accidental leaks or spills that have not yet been identified,
- (4) Litigation, and
- (5) State or federal negotiated or mandated requirements.

Given these uncertainties, Staff notes that PSE’s estimates may change in the future. While the potential costs associated with future liabilities are speculative at this time and outside the scope of this investigation, we note that the Commission could consider requesting PSE provide further information about these and other costs in a future general rate case or other proceeding. This would provide an opportunity for Staff to audit PSE’s accounts, and interested parties to conduct

³ PSE provided estimates in 2014 dollars.

⁴ PSE provided estimates in 2014 dollars. Staff has included a table showing the net present value of these estimates on page 12 of this report.

⁵ PSE provided estimates in 2014 dollars.

⁶ See Attachment A, PSE Response to Staff Data Request 001.

discovery, file expert witness testimony, conduct cross-examination of witnesses, and prepare legal briefs.

Currently, PSE collects approximately \$5 million annually from customers to cover depreciation expense associated with Colstrip Units 1 & 2. As of June 30, 2015, PSE states that the net amount in the depreciation reserve associated with these units is \$11.7 million. PSE recorded new asset retirement obligations of \$16.6 million in June 2015. According to the company, these obligations represent its estimated cost, in net present value terms, to comply with the U.S. Environmental Protection Agency's Coal Combustion Residuals (CCR) Rule, adopted in December 2014. Concurrently, the company began recognizing incremental annual depreciation expense associated with the increased estimated remediation costs of \$1.2 million per year through 2040.

PSE stated in its response that the company is not recovering the newly recognized asset retirement obligations in current rates, however, they will be incorporated into its next depreciation study, timed for inclusion in its next general rate case.⁷ PSE is required to file a general rate case before April 1, 2016.⁸

If the Commission approves these costs for inclusion in rates, as described by PSE in its comments, PSE would continue to recover remediation costs from customers for five years after the 2035 retirement date assumed in its existing depreciation study.⁹

⁷ Comments of PSE, at 21.

⁸ Final Order Granting Petition, Docket UE-121697/UG-121705 (*consolidated*), Order 07, ¶137 (June 25, 2013). PSE is required under the rate plan to file a general rate case no later than April 1, 2016, which would establish rates effective in 2017.

⁹ Comments of Puget Sound Energy, Inc. (PSE) on Notice of Opportunity to File Written Comments on Investigation of Coal-Fired Generating Unit Decommissioning and Remediation Costs, at 21. (September 15, 2015) (hereinafter, Comments of PSE).

II. Background

The Colstrip generating plant is a coal-fired steam electric plant located in eastern Montana, about 120 miles southeast of Billings. The four-unit facility is the largest coal-fired generating facility serving Washington customers, and accounts for approximately 30 percent of PSE's generation mix. The owners of the four units of the Colstrip facility are described below.

- Units 1 & 2 (307 MW each) began operation in 1975 and 1976. These units are jointly owned by PSE and Talen – each owning a 50 percent interest in both units. PSE is an investor-owned utility providing retail service to approximately 1.1 million electric and 790,000 natural gas customers in the state of Washington, and is regulated by the UTC. Talen is a merchant operator, not regulated by any state commission.
- Units 3 & 4 (740 MW each) began operation in 1984 and 1986. These units are jointly owned by the three Washington investor-owned utilities, including PSE, Avista and PacifiCorp, and three other entities not regulated by the UTC: Talen, Portland General Electric, and Northwestern Energy.

Executive Order on Carbon Pollution and Clean Energy Action

In April 2014, Governor Inslee signed Executive Order 14-04, outlining a series of policy initiatives to reduce carbon emissions in Washington state and to promote clean energy development.¹⁰ The Executive Order called for the Governor's Legislative and Policy Office to work with electric utilities that rely on out-of-state coal-fired generating facilities to negotiate agreements to reduce the use of coal-fired electricity. It also called for the UTC to "actively assist and support the reduction of coal-fired electricity, within the scope of its jurisdiction and authority."

2015 Legislation: Retiring eligible coal plants

During the 2015 Legislative session, PSE supported legislation that would have provided a potential regulatory path toward closure of Colstrip Units 1 & 2.¹¹ The bills would have allowed PSE to seek Commission approval of a plan to acquire Talen's ownership share of Colstrip units 1, 2, and 3, and to propose a plan to retire Units 1 & 2.¹²

The bill also authorized a subsidiary of PSE (or another electric company) to issue bonds to pay for decommissioning and remediation costs associated with the closure of an eligible coal plant. Versions of the bill were heard in both the Senate Environment, Energy and Telecommunications Committee and the House Technology and Economic Development Committee. The legislation failed to pass a vote of the Senate committee on June 26, 2015.

¹⁰ [Executive Order 14-04](#); Washington Carbon Pollution Reduction and Clean Energy Action.

¹¹ [HB 2002](#), [SB 5874](#), [SB 6132](#).

¹² RCW 80.80.060 provides that no electrical company may enter into a long-term financial commitment unless the baseload electric generation under such a long-term financial commitment complies with the greenhouse gas emissions performance standard established under RCW 80.80.040.

Colstrip Investigation (UE-151500)

The UTC holds broad authority to investigate matters under its purview, and commonly initiates investigations into the activities of regulated companies outside of an adjudicative proceeding.¹³ As noted above, the purpose of this investigation is to provide more clarity around PSE's estimated costs of closure at this time, to understand the context and nature of PSE's obligations, and to quantify, to the extent possible, the level of these costs recovered in PSE's rates over time.

By notice filed on July 21, 2015, the Commission requested PSE and other interested parties respond to specific questions concerning the estimated costs associated with decommissioning Colstrip Units 1 & 2 at the end of the units' useful lives, remediation obligations at the site, the monies held by PSE for these purposes, and the current depreciation schedule for Colstrip Units 1 & 2.¹⁴ In response to its initial request, the Commission received approximately 1,200 comments, including those from PSE, members of the Washington State Legislature, representatives of local governments, representatives of the State of Montana, organizations representing Washington and Montana businesses, members of the Sierra Club and other environmental organizations, Northwest Energy Coalition, Industrial Customers of Northwest Utilities (ICNU), the Public Counsel Division of the Washington Attorney General's Office, and members of the public, including PSE customers. All comments received in this docket are available on the Commission's website.¹⁵

By notice issued November 18, 2015, the Commission provided an additional opportunity for interested persons to respond to the answers and comments provided by parties pursuant to the Commission's previous notice.¹⁶ The Commission received 27 additional comments from the National Parks Conservation Association, the City of Olympia, Northwest Energy Coalition, ICNU, the Sierra Club, and the Public Counsel Division of the Washington Attorney General's Office.

From July through December 2015, a team of UTC policy and regulatory staff reviewed the information obtained in this docket and other dockets related to this issue, and held meetings with PSE.¹⁷ This report provides a review of preliminary information obtained through Staff's investigation.

¹³ RCW 80.01.040; 80.04.070; 80.28.010; and *US West v. Utils. And Transp. Comm'n.* 134 Wn2d 48, 56 (Wash. 1997).

¹⁴ Notice of Opportunity to File Written Comments: Investigation of Coal-Fired Generating Unit Decommissioning and Remediation Costs, Docket UE-151500, (July 21, 2015).

¹⁵ Visit www.utc.wa.gov and search for Docket UE-151500.

¹⁶ Notice of Opportunity to File Written Comments, Docket UE-151500, (November 18, 2015).

¹⁷ The Commission's regulatory Staff serve as an independent third-party providing technical analysis in Commission proceedings with the intent to balance the interests of the utility, ratepayers, and the public at large. Policy Staff advise the Commissioners directly and provide consultation based upon the record and Commission policies. Unlike in adjudicative proceedings, where the Commission's rules governing ex parte communications prevent regulatory Staff from discussing matters with the Commissioners or their policy Staff, the Commissioners and policy Staff are free to discuss matters with the regulatory Staff as part of a Staff investigation such as this.

Sierra Club Petition (UE-151592)

Subsequent to the Commission's initiation of this investigation, the Sierra Club, Climate Solutions, and the Washington Environmental Council filed a Petition for Adjudicatory Proceeding Relating to the Prudence of Continued Investments in Colstrip Units 1 & 2 (Petition).¹⁸ The Petitioners requested that the UTC commence an adjudicatory proceeding for the purpose of determining the prudence of any ongoing and new capital expenditures made by PSE to support the ongoing operations of Colstrip, and to establish a closure or partial-closure plan for Colstrip Units 1 and 2.¹⁹ The Petitioners stated that written comments received in this investigation "may not provide sufficient information for significant decisions that may be required relating to Colstrip Units 1 & 2,"²⁰ and requested that the Commission initiate an adjudicative proceeding including "the opportunity to conduct discovery, submit evidence in the form of written testimony and exhibits, participate in evidentiary hearings, and submit legal briefing."²¹ Public Counsel supported the Petitioners' request to open an adjudicative proceeding.²²

On August 14th, 2015, PSE responded to the Petitioners' filing, seeking dismissal of the Petition.²³ Commission Staff supported PSE's Motion to Dismiss, relying on the Commission's denial of previous requests by the Sierra Club to initiate an adjudicative proceeding concerning future Colstrip costs, and the expected substantive and procedural value of the Commission's pending investigation into the issues raised by the Petitioners.²⁴

On October 13, 2015, the Commission denied PSE's Motion to Dismiss the Petition. The Commission found that the Petitioners sought relief that was not available at that time, but which may be available in the future in the context of one or more adjudicative proceedings. The Commission found the Petitioners to be "eligible applicants" within the meaning of RCW 34.05.419(3), and granted them notice of all future proceedings that raise, or potentially raise issues concerning PSE's ownership and operation of Colstrip.²⁵ The Commission ordered that the Petitioners be allowed to participate and advocate specific outcomes in such proceedings.

¹⁸ Petition for Adjudicatory Proceeding Relating to the Prudence of Continued Investments in Colstrip Plant Units 1 and 2, Docket UE-151592, (July 31, 2015).

¹⁹ *Id.*

²⁰ *Id.*, at ¶ 33.

²¹ *Id.*, at ¶ 34.

²² Public Counsel Response to Petition for Adjudicative Docket, Docket UE-151592, (August 20, 2015).

²³ PSE Motion to Dismiss, Docket UE-151592, (August 14, 2015).

²⁴ Staff Response Supporting Puget Sound Energy Inc.'s Motion to Dismiss, Docket UE-151592, (August, 24, 2015.) As noted in footnote 17, in formal adjudicatory proceedings, the Commission's regulatory Staff would participate like any other party. To assure fairness, the Commissioners, the presiding administrative law judge, and the Commissioners' policy and accounting advisors do not discuss the merits of the adjudicative proceeding with the regulatory Staff, or any other party, without giving notice and opportunity for all parties to participate. *See* RCW 34.05.455.

²⁵ Order Denying Motion to Dismiss and Determining Eligibility Under RCW 34.05.419(3), Docket UE-151592, Order 01, ¶ 28, (October 13, 2015).

I. PSE's Response and Its Currently Estimated Decommissioning and Remediation Costs

On September 15th, 2015, PSE filed narrative responses to the questions raised in the Commission's July 21, 2015 Notice in this docket. The following sections summarize Staff's understanding of the Company's response, describe the accounting standards applicable to decommissioning and remediation costs, and discuss how costs are accounted for in PSE's current rates.

Decommissioning

The first major category of costs involves decommissioning. In its response, PSE defines the term "decommissioning" as the actions required to suspend operations and remove some or all of the above-grade structures associated with Colstrip Units 1 & 2, followed by "reasonable" restoration in the area.²⁶ According to PSE, it is currently under no legal obligation to dismantle the above-grade plant structures at Colstrip.

PSE also stated that Talen, the plant operator and 50-percent owner of Units 1 & 2, has not conducted any decommissioning studies for Colstrip Unit 1 & 2. PSE explained that it recently commissioned a study of an "order of magnitude" cost estimate for dismantling the above grade structures associated with Colstrip Units 1 & 2.²⁷ According to PSE, the study was conducted using the Colstrip Engineering Data Manuals and other relevant information from similarly situated plants. Staff did not receive a copy of this study. PSE lists the major assumptions used in this study on page 12 of its comments.²⁸

According to PSE, the engineering study projected the cost of decommissioning and demolition to be approximately \$81,000/MW, or \$49.7 million.²⁹ This figure represents PSE's projected cost of decommissioning both Colstrip Units 1 & 2, of which PSE's portion is approximately \$25 million. The engineering study did not address the costs associated with wastewater impoundments, or other below grade structures outside of the physical plant. These projected costs are discussed later in this report.

Remediation

The second major category of costs involves environmental remediation at the site. In its response, PSE uses the term "remediation" to apply to measures required to comply with regulations affecting soil and groundwater at the site. PSE identified two known regulations associated with groundwater remediation: (1) the U.S. Environmental Protection Agency's (EPA) Coal Combustion Residuals (CCR) Rule; and (2) the Montana Department of Environmental Quality (MDEQ) Wastewater Pond Agreed Order on Consent (AOC). These requirements serve as the basis for PSE's remediation cost assumptions.

²⁶ Comments of PSE, at 6:1-7.

²⁷ *Id.*, at 11:12-15.

²⁸ *Id.*, at 11:12-21.

²⁹ These estimates are expressed in 2014 dollars, and based on the nameplate capacity of the units (307 MW). Other assumptions are listed on page 12 of PSE's comments.

1. CCR Rule: On December 19, 2014, EPA adopted regulations concerning the disposal of coal combustion residuals from coal-fired power plants.³⁰ CCR is a generic term for the solid wastes that comes from the burning of coal in power plants, including fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) materials. The rule regulates CCR as a non-hazardous waste under subtitle D of the Resource Conservation and Recovery Act (RCRA).³¹ The rule establishes minimum criteria for the safe disposal of CCR in landfills and surface impoundments to reduce the risks of groundwater contamination, structural failure of impoundments, and fugitive dust emissions. The rule took effect on October 17th, 2015, and applies to all wastewater ponds that continue to receive CCRs or that contain CCRs and continue to impound water on or after that date. Some pertinent sections of the rule, as identified by Staff, are summarized below:

Liner Design Criteria (Sections 257.70 - 257.72): The CCR Rule adopts design criteria for new and existing CCR landfills and surface impoundments. If an existing CCR impoundment was not constructed with a composite liner or in accordance with alternative specifications, and statistically significant concentrations of constituents of concern are detected, the rule requires the unit to be retrofitted or closed.³²

Hazard Potential Assessments (Section 257.73(2)): As part of its development of the CCR Rule, EPA conducted an assessment of “hazard potential ratings” for surface impoundments. The ratings do not refer to the condition or structural stability of the impoundment, but instead refer to the potential for loss of life or damage if there is a structural failure. The rule requires operators to conduct periodic hazard potential classifications; and for those units with a hazard potential classification of “significant” or “high,” to develop an Emergency Action Plan to address the impacts of a potential failure by April 17, 2017 (Section 257.73). In the early phase of rule development, a report prepared for PPL Montana, Talen’s predecessor, characterized the Colstrip Units 1 & 2 Stage Two Evaporation Pond (STEP) as having a “high hazard potential,” and the Colstrip Units 1 & 2 “A” Pond and 1 & 2 Bottom Ash Pond as having “significant hazard potential.”³³

Groundwater Monitoring (Sections 257.93 – 95): The CCR Rule requires operators of CCR units to install a system of monitoring wells and specify procedures for sampling wells (Section 257.93). Operators are required to establish methods for analyzing the groundwater data to detect the presence of hazardous constituents and other parameters, as determined by the groundwater protection standard defined in

³⁰ 80 Fed. Reg. 21302 (April 17, 2015). Although adopted in December, the final rule was not published in the Federal Register until April.

³¹ For more information about the CCR Rule, see www2.epa.gov/coalash/coal-ash-rule.

³² 40 C.F.R. § 257.70 (2015). The CCR Rule defines a composite liner as a liner system consisting of two components – a geomembrane and a two-foot layer of compacted soil – installed in direct and uniform contact with one another.

³³ 40 C.F.R. § 257.73(2) (2015). GEI Consultants, *Coal Ash Impoundment – Specific Site Assessment Report*, Appendix B, (September 2009). www3.epa.gov/epawaste/nonhaz/industrial/special/fossil/surveys2/ppl-colstrip-final.pdf.

section 257.95(h) of the rule. Once a groundwater monitoring system and program has been established, the operator must conduct semi-annual “detection” groundwater monitoring (Section 257.94). If the groundwater protection standard for the area is exceeded, continued “assessment” groundwater monitoring is required (Section 257.95).³⁴

Corrective Actions (Sections 257.96 - 98): If assessment monitoring detects statistically significant levels of certain constituents exceeding the groundwater protection standard, or if leakage from a CCR unit is detected, the owner or operator must initiate an assessment of corrective measures (Section 257.96), select a remedy (Section 257.97), and implement corrective actions (Section 257.98).

Closure and Post-Closure Care (Section 257.100 - 102): CCR units are required to close in accordance with specified standards and undergo monitoring and maintenance for a period of time after closure. Closure must be completed by leaving the CCR in place and installing a final cover system, or by removing the CCR and decontaminating the CCR unit. Affected entities must develop a post-closure care plan by October 17, 2016, which includes a plan to maintain the integrity and effectiveness of the final impoundment cover system and semi-annual groundwater monitoring for a period of at least 30 years post-closure, unless assessment monitoring is required (Section 257.104(3)(c)). If assessment monitoring is required, the operator must continue to conduct post-closure care until the requirements of Section 257.95 are satisfied.

Alternative Closure Requirements (Section 275.103): The rule provides for alternative procedures where no alternative CCR disposal capacity exists and the coal-fired boiler unit is scheduled for permanent closure in the foreseeable future.³⁵ Inactive surface impoundments that complete closure by April 17, 2018 are exempt from post-closure care requirements (Section 257.100(b)).

Implementation and Notification Requirements (Sections 257.105-107): The rule is self-implementing, meaning that facilities must comply with the requirements without regulatory oversight by EPA. States are strongly encouraged, but not required to adopt the regulations or to develop a permit program.³⁶ Citizens, states and tribes may enforce the requirements under RCRA’s citizen suit authority.³⁷ The rule requires

³⁴ 40 C.F.R. § 257.93-257.95 (2015). “Detection Monitoring” is required for constituents listed in Appendix III: Boron, Calcium, Chloride, Fluoride, pH, Sulfate, and Total Dissolved Solids (TDS). If Detection Monitoring detects concentrations above BSL, “Assessment Monitoring” is required for constituents listed in Appendix IV: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Radium 226 and 228.

³⁵ 40 C.F.R. § 257.103 (2015). Subsections (b)(2) & (3) allow for continued use of CCR impoundments in the interim period if the coal-fired boiler and surface impoundment are scheduled to cease operation and complete closure by Oct. 17, 2023, for impoundments 40 acres or smaller, and by Oct. 17, 2028 for impoundments 40 acres or larger.

³⁶ 40 C.F.R. § 256 (1979). A state may secure approval of its CCR program through the State Solid Waste Management Plan.

³⁷ 42 U.S.C. § 6972 (1984).

operators to notify states and appropriate Tribal authorities of certain operating information, and maintain a publicly accessible internet site for this information.

2. Wastewater Pond AOC:³⁸ The Colstrip plant is subject to the requirements of the Montana Major Facility Siting Act (MCA, Section 75-20-101, et seq.) and the Montana Water Quality Act (MCA, Section 75-5-101). The MDEQ is currently engaged in an enforcement action against Talen (formerly, PPL Montana) pertaining to groundwater contamination caused by leaking impoundment ponds at Colstrip. In 2012, the parties negotiated an Administrative Order on Consent (AOC), which requires groundwater monitoring, investigation of the extent of pond seepage, necessary corrective actions, and financial assurance for these activities. The AOC is now being administered by Talen and MDEQ.

Before transferring its ownership and operations of the plant to Talen in 2014, former Colstrip owner and operator PPL Montana took actions to address groundwater contamination at the site prior to execution of the AOC. These actions included the installation of capture wells to control the expansion of groundwater contamination. MDEQ has reported that, while these actions were effective, the groundwater contamination had migrated beyond the groundwater capture systems in certain areas at the time the AOC was executed.³⁹

The AOC outlines a process for site characterization, risk assessment, cleanup criteria development, remedy evaluation and remediation for three areas: (1) the Plant Site complex, (2) the CCR ponds for Units 1 & 2, and (3) the CCR disposal ponds for Units 3 & 4. As part of the site characterization process, MDEQ recently approved Colstrip's Plant Site complex report. Next, MDEQ will review the site reports for the other two sites and Talen's recently submitted cleanup criteria and risk assessment work plan for the Plant Site. Talen is obligated to develop and submit a detailed pond closure plan to address seepage impacts to MDEQ by August 2017.

The AOC measures contamination based on the background concentration of "constituents of interest" at the site. Constituents of interest are defined as those parameters found in soil, groundwater, or surface water that (1) result from site operations and the wastewater facilities and (2) exceed background or unaffected reference areas concentrations.⁴⁰ Preliminary background screening levels (BSLs) for dissolved solids, common ions, and trace elements are currently being reevaluated by

³⁸ Information and documents pertaining to the MDEQ Wastewater Pond AOC is available on the MDEQ website at www.deq.mt.gov/mfs/ColstripSteamElectricStation/.

³⁹ *Administrative Order on Consent Regarding Impacts Related to Wastewater Facilities Comprising the Closed-Loop System at Colstrip Steam Electric Station, Colstrip Montana*, § I, at 9 ¶M (July 30, 2012) (available at www.deq.mt.gov/mfs/ColstripSteamElectricStation/).

⁴⁰ *Id.*, § IV, at 12 ¶F.

Talen and MDEQ. In June 2015, MDEQ reported that BSLs for constituents of interest will change significantly in the near future.⁴¹

Both the CCR Rule and the AOC require a determination of a groundwater protection standard and/or BSLs for groundwater monitoring purposes. At this time, it is not clear to Staff when these standards will be determined, or whether the same standards will be used for compliance with both federal and state requirements. However, it is apparent that such standards for the site could ultimately determine the length of time that remediation activities are necessary to comply with both the AOC and the CCR rule.

Estimated remediation costs: Based on an engineering study conducted by Geosyntec, Inc., on behalf of Talen, PSE estimates that the costs of known remediation requirements for Colstrip Units 1 & 2 will range from \$85 million to \$142.7 million, depending on the date of closure.⁴² PSE's estimates for remediation costs increase the longer the units remain in service, and include costs for design and construction of a dry ash disposal system at the site in all scenarios with a post-2025 shutdown.

PSE assumes it will be responsible for half of these costs, or approximately \$42.5 to \$72.5 million.⁴³ PSE's summary of the study assumes 30 years of "mitigation/wastewater management; post-closure care" will be required after each closure date.⁴⁴ Staff notes that the CCR Rule requires a minimum of 30 years of semi-annual groundwater monitoring, but the rule could require Colstrip owners to conduct groundwater monitoring and implement corrective actions indefinitely.

The following table represents discounted 100-percent cost estimates related to the CCR management systems for Colstrip Units 1 & 2. The information provided here is based on PSE's summary of a report produced by Geosyntec, Inc. for Talen concerning the cost to comply with the EPA's CCR Rule. In its response, PSE stated that cost estimates are dated November 2015 and may be subject to change with further CCR Rule interpretation and implementation.⁴⁵

⁴¹ Hydrometrics, Inc., PPL Montana, LLC, *Colstrip Steam Electric Station Administrative Order on Consent, Plant Site Report*, at 3-39 and 3-41. (December 2012, Revised July 2015).

(available at www.deq.mt.gov/mfs/ColstripSteamElectricStation/). MDEQ has required Talen to recalculate BSLs. (Also see Comments of Sierra Club and MEIC, Attachment 7, at 9).

⁴² These 100% cost estimates are based on 2014 dollars. PSE did not provide this Geosyntec report to Staff, but provided a summary of its findings, based on the closure scenarios used by the Commission in its July Notice. PSE's summary is attached as Appendix A to this report.

⁴³ Taking into account the effects of discounting, the net present value for these estimates range from \$31.8 to \$46.1 million for PSE's responsible costs.

⁴⁴ See Attachment A - Puget Sound Energy Response to Staff Data Request 001.

⁴⁵ See Attachment A.

Table 1: Discounted Remediation Costs and Expenses by Closure Date Scenario (100% costs)

(dollars in thousands)

Closure Date	Scenario	NPV O&M (100%)	NPV Capital (100%)	NPV Mixed (100%)	Total (100%)
2020	Assume implementation of Alternate Closure provision in CCR Rule. Close 1&2 B Pond and 1&2 Bottom Ash Pond within 8.5 years by 2023, other CCR ponds closed by 2025. Post-closure care through 2050.	\$23,374	\$40,323	N/A	\$63,697
2025	Assume implementation of Alternate Closure provision in CCR Rule. Continue to operate as normal, but assume a groundwater closure trigger occurs in Jan. 2018. All 1&2 ponds are closed within 13.5 years by 2028. Close plant in 2025 to avoid STEP C Cell construction and dry disposal costs. Post-closure care through 2055.	\$18,698	\$27,126	\$25,163	\$70,987
2030	Operation after 2028 will result in dry disposal/landfill costs. Post-closure care through 2060.	\$20,841	\$29,119	\$38,367	\$88,327
2035	Post-closure care through 2065.	\$24,110	\$28,551	\$36,869	\$89,530
2037	Post-closure care through 2067.	\$25,560	\$28,381	\$36,149	\$90,090
2040	Post-closure care through 2070.	\$28,306	\$28,145	\$35,821	\$92,271

Note: Discount Rate of 3.000% taken from 30 Year Treasury Bond Interest Rate for 11/16/2015.

II. What are the Decommissioning and Remediation Costs Currently Included in PSE's Rates?

PSE must collect funds for decommissioning and remediation activities at Colstrip Units 1 & 2 in accordance with accounting standards applicable to all regulated utilities. Electric utilities subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) are required to maintain their books and records in accordance with FERC's Uniform System of Accounts (USoA). The UTC requires jurisdictional utilities to use the FERC USoA and accounting guidance.⁴⁶

An important concept referred to in regulatory principles as "intergenerational equity", aims to ensure that the same group or generation of customers that benefits from a resource also bears the costs of that resource, including the removal costs at the end of its useful life. Generally, the UTC has applied the guidance of the National Association of Regulatory Utility Commissioners (NARUC) on this issue:

Historically, most regulatory commissions have required that both gross salvage and cost of removal be reflected in depreciation rates. The theory behind this requirement is that, since most physical plant placed in service will have some residual value at the time of its retirement, the original cost recovered through depreciation should be reduced by that amount. Closely associated with this reasoning are the accounting principle that revenues be matched with costs and the regulatory principle that utility customers who benefit from the consumption of plant pay for the cost of that plant, no more, no less. The application of the latter principle also requires that the estimated cost of removal of plant be recovered over its life.⁴⁷

In its response, PSE considers the cost of decommissioning and remediation to include two categories of costs: (1) Non-Asset Retirement Obligation cost of removal ("cost of removal"), and (2) Asset Retirement Obligations (AROs).

Cost of removal (Non-Asset Retirement Obligations) (Non-ARO):

"Cost of removal" is defined in the USoA as follows:

[T]he cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including the cost of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation. (Title 18 CFR, Part 101)

⁴⁶ WAC 480-100-203 and Title 18 CFR, Part 101.

⁴⁷ National Association of Regulatory Utility Commissioners (NARUC), *Public Utility Depreciation Practices*, (August 1996), at 157.

Recognizing that AROs are created only by a legal obligation, “cost of removal” refers to costs that are not associated with a legal obligation, but are nonetheless expected to be incurred to remove an asset at the end of its useful life.⁴⁸ These costs are embedded in annual depreciation expense such that sufficient funds are collected through rates over the facility’s useful life, and no further recovery of the plant’s removal cost is expected from customers by the end of its life. For ratemaking purposes, the cost of removal, as built into depreciation expense, increase the accumulated depreciation reserve over time and are treated as a reduction to gross plant investment when determining PSE’s rate base.

PSE’s current rates collect the cost of removal, net of salvage, for all four Colstrip units as estimated in a 2006 depreciation study conducted by PSE and reviewed by the Commission in PSE’s 2007 general rate case.⁴⁹ That study calculated proposed depreciation rates and annual depreciation expenses including an estimated cost of removal of \$20.4 million for Colstrip Units 1 & 2.⁵⁰ PSE states that this estimate included both unspecified cost of removal, net of salvage, and known AROs at the expected time of plant retirement.⁵¹

While PSE’s 2006 depreciation study assumed a probable retirement year of 2019 for Colstrip Units 1 & 2, it did not establish a date certain for plant retirement.⁵² Through a partial settlement, the Parties to PSE’s 2007 General Rate Case agreed to use a longer asset life for the units, as proposed by Commission Staff and the Attorney General’s Office of Public Counsel, extending the depreciable life of Units 1 & 2 to 2035 and mitigating the impact of the overall rate increase. The Commission approved the partial settlement, including lower depreciation rates for these accounts, effective November 1, 2008.⁵³

Potential tax impacts

Besides depreciation, another significant potential factor is deferred taxes. Currently, PSE states that the two units carry about \$30 million in deferred taxes. These are treated as a reduction to the net book value of the plant for the purpose of determining the rate base of Colstrip Units 1 & 2. In its comments, PSE states that the financial and tax impacts of plant retirement are not considered “known and measurable” at this time.⁵⁴ Staff expects that these federal deferred income tax issues would be resolved in the context of a future general rate case.

⁴⁸ Comments of PSE, at 19:19-21, 20:1-2.

⁴⁹ Clarke Exh. CRC-3, Docket UE-072300, (December 3, 2007).

⁵⁰ Comments of PSE, at 20:4-9.

⁵¹ When the expected cost of removal exceeds the expected salvage value of the asset, as it does in the case of Colstrip, this is reflected in the depreciation study as a negative salvage value. In this instance, PSE’s 2006 Depreciation Study assigned negative salvage values for all four Colstrip units equal to 10 percent of the original plant investment. This 10 percent negative net salvage value is reflected in the amount recovered from customers through the Colstrip facilities’ depreciation expense to cover the expected cost of removal.

⁵² Clarke Exh. CRC-3, at 11-28, 38, Docket UE-072300, and Comments of PSE, at 18:9-12. PSE’s initially filed depreciation study assumed a useful life of 43 and 44 years for Colstrip Units 1 & 2, respectively.

⁵³ Final Order Approving and Adopting Settlement Stipulations, Docket UE-072300, Order 12, ¶ 57, (October 8, 2008).

⁵⁴ Comments of PSE, at 23:9-10.

Asset Retirement Obligations (AROs)

In April 2003, FERC issued an order adopting Accounting, Financial Reporting, and Rate Filing Requirements for Asset Retirement Obligations within the USoA.⁵⁵ AROs are described in the USoA as follows:

An asset retirement obligation represents a liability for the legal obligation associated with retirement of a tangible long-lived asset that a company is required to settle as a result of an existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. An asset retirement cost represents the amount capitalized when the liability is recognized for the long-lived asset that gives rise to the legal obligation. The amount recognized for the liability and an associated asset retirement cost shall be stated at the fair value of the asset retirement obligation in the period in which the obligations is incurred. (Title 18 CFR Chapter 1, Subchapter C, Part 101, Subpart 25.)

In other words, an ARO represents a future legal obligation associated with removing an asset upon retirement valued at the net present value. According to FERC rules, an entity recognizes a liability at the fair value of an ARO at the time the asset is constructed or acquired, or later when a change in the law creates a legal obligation to perform the retirement activities.⁵⁶ The associated costs are then added to the cost of the asset, and depreciated over the useful life of the facility so that sufficient costs are recovered to cover the legal obligation at the end of the facility's life.⁵⁷

Ideally, depreciation rates should be designed so that when it is time to decommission the plant, the company can debit the accumulated depreciation reserve or the ARO, without incurring new expenses or needing to recover additional funds from ratepayers, who may not benefit from the use of the asset. To the extent that actual removal costs differ from estimates, that difference may be considered in future depreciation studies.

Although PSE states that it collects approximately \$5 million annually in total depreciation expense associated with Colstrip Units 1 & 2, the company asserts that, as of June 30, 2015, the net amount collected from customers for its costs of removal, including legal and non-legal obligations for Colstrip Units 1 & 2, is only \$11.7 million.⁵⁸

⁵⁵ 18 C.F.R. § 35, 101, 154, 201, 346, and 352 (2003). Accounting, Financial Reporting, and Rate Filing Requirements for Asset Retirement Obligations, Order No. 631 (U.S. Fed. Energy Reg. Comm'n., April 9, 2003) FERC specifically did not propose any changes to its existing accounting requirements for cost of removal for non-AROs (referred to as "non-legal retirement obligations"). Instead, FERC required jurisdictional entities to maintain separate subsidiary records for non-legal retirement obligations that are included in accumulated depreciation (i.e., "cost of removal", as described above).

⁵⁶ *Id.* at 5:11. The liability is increased over time until the actual retirement activity commences. Additionally, the asset retirement cost is capitalized and depreciated over the same life of the related asset giving rise to the obligation. An entity is required to re-measure the liability due to the passage of time and certain other changes in the estimate of the liability.

⁵⁷ Comments of PSE, at 19:6-18.

⁵⁸ Comments of PSE, at 20:12-14. Based on the information provided by PSE, Staff understands that the \$11.7 million balance reflects recovery of a portion of future removal and retirement costs along with the completion of

PSE's current rates are authorized to recover the cost of removal and AROs identified in its 2006 depreciation study. PSE's projected cost of its newly recognized legal obligations for remediation exceed the amounts collected through current depreciation rates. In its response, PSE commented that it recorded new AROs of \$16.6 million in June 2015. PSE states that this amount represents the net present value of the estimated future cost of compliance with the final CCR Rule.⁵⁹ Concurrently, PSE states that it began recognizing associated incremental annual depreciation expense of \$1.2 million per year through 2040 for asset retirement costs associated with this ARO.⁶⁰ PSE states that these newly recognized AROs are not currently being recovered in rates, but will be incorporated into its next depreciation study, timed for inclusion in its next general rate case, which PSE is required to file before April 1, 2016.⁶¹

As noted above, Staff did not audit PSE's estimates provided in this investigation. But, the 2016 general rate case proceeding will provide the proper forum for Staff and interested persons to examine the assumptions used in these estimates and provide a full record for the Commission's consideration.

ongoing decommissioning and remediation activities associated with Colstrip units 1 & 2. A future proceeding will provide an opportunity for Staff to assess the amounts collected from ratepayers for these purposes.

⁵⁹ Comments of PSE, at 20. An entry for the liability is booked to FERC Account 230, with an equal and offsetting entry booked to FERC Account 101 for the asset retirement cost.

⁶⁰ Comments of PSE, at 21:4-8.

⁶¹ Comments of PSE, at 21. Final Order Granting Petition, Docket UE-121697/UG-121705 (*consolidated*), Order 07, ¶137 (June 25, 2013).

III. What Costs Are Not Included in PSE's Rates?

Staff notes that a number of factors could cause PSE's current estimates to change. PSE identifies the following categories of uncertainties that could affect decommissioning and remediation requirements in the future:

- (1) environmental laws or regulations not yet promulgated,
- (2) amendments to existing laws or regulations that require greater stringency for certain constituents associated with the operation of Colstrip Units 1 & 2,
- (3) accidental leaks or spills that have not yet been identified,
- (4) litigation, and
- (5) state or federal negotiated or mandated requirements.

As an example, PSE notes in its response that the U.S. Environmental Protection Agency's "Clean Power Plan" rule adopted in August under section 111(d) of the Clean Air Act requires the state of Montana to significantly reduce carbon dioxide emissions from existing power plants by 2030. Under the Clean Power Plan, states are required to file a preliminary plan or request an extension by September 2016, and develop a final state implementation plan or default to a federal implementation plan by 2018.

Staff believes that unknown costs and risks associated with continued operation of Colstrip could have an impact on decommissioning and remediation costs. However, the Commission did not request a full accounting of these unknown costs and risks in this investigation.

IV. Public Involvement

This investigation also garnered significant public interest from elected officials, stakeholder groups, and individual customers of Washington utilities. The UTC received approximately 1,200 comments in this docket. In general, commenters raised the following concerns:

- *Environmental concerns:* Commenters, including members of the public who are customers of PSE, requested that the UTC require PSE to close Colstrip to reduce carbon emissions and mitigate the impacts of climate change. Commenters also raised concerns about the coal ash waste management method used at Colstrip, and whether the plant operator should have taken different or earlier action to mitigate groundwater contamination at the site.
- *Long-term costs and risks:* Commenters, including members of the Washington state Senate; the mayors of Issaquah, Kirkland, Mercer Island, Olympia, Redmond, Shoreline and Snoqualmie; and King County Executive Dow Constantine, recommended that the UTC expand the scope of this investigation to evaluate the long-term costs and risks associated with continued operations at Colstrip. For example, the Sierra Club and the Montana Environmental Information Center (MEIC) claim in their comments that the impoundment ponds at Colstrip have failed, and will continue to fail in the future. These commenters expressed concern that the costs of managing coal ash waste at the facility will continue to increase the longer that Colstrip remains in operation, and that these costs will be passed on to future ratepayers. The Sierra Club and MEIC further recommended that the Commission include the cost of greenhouse gas emissions and risks of future environmental compliance costs in its evaluation.
- *Economic development:* Commenters, including Montana Governor Steve Bullock, members of the Montana Legislature's Energy and Telecommunications Interim Committee, and the Southeastern Montana Development Corporation, requested that the UTC consider the economic impacts on the state of Montana and the City of Colstrip under a closure plan, and ensure a just transition for Montana communities.
- *Colstrip Units 3 & 4:* Some commenters, including the mayors of King County cities, recommended that the UTC expand the scope of this investigation to include Colstrip Units 3 & 4. By contrast, PacifiCorp, which owns a portion of Colstrip Unit 4, requested that the investigation remain limited to Colstrip Units 1 & 2, and expressed concern that the record in this investigation will set a precedent which will be used as the basis for policy decisions regarding decommissioning and remediation costs related to the retirement of other coal-fired generating facilities.
- *Replacement power:* Some commenters, such as Northwest Energy Coalition, recommended that the UTC expand the scope of this investigation to include an evaluation of the costs and benefits of replacing the power generated by Colstrip Units 1 & 2 with other resources.
- *Procedural concerns:* Commenters had a number of procedural suggestions, recommending that the UTC hold a technical conference or workshop, provide for an additional round of comments, convert the investigation into an adjudicative proceeding or consolidate the investigation with other dockets to allow for discovery, written

testimony and exhibits, evidentiary hearing, and legal briefing. Stakeholders, including the Public Counsel Division of the Attorney General’s Office, the Sierra Club, and ICNU requested that the UTC require PSE to produce all work papers and data used to derive any and all estimates and assumptions used in their response.

While Staff believes that most of the concerns raised by commenters are outside the scope of this investigation, many of the commenters provided substantive information that is relevant to the Commission’s role as an economic regulator. We believe that these issues warrant consideration in the policy discussions surrounding closure of the plant. A high-level summary of these comments is provided below.

A. Comments of the Sierra Club and MEIC

The Sierra Club and MEIC jointly filed comments stating that the scope of this investigation is insufficient to address all of the long-term costs and risks that Washington ratepayers face due to continued reliance on Colstrip. Their comments focused on the potential liabilities associated with groundwater contamination caused by Colstrip’s coal ash impoundments, and the estimated costs to continue operating the plant.⁶²

For example, the Sierra Club and MEIC provided a list of capital investments and operations and maintenance activities proposed by Talen to comply with the CCR Rule over the next five years, assuming the plant continues to operate.⁶³ The Sierra Club and MEIC state that these costs, estimated at \$10 million per new pond liner installation and annual monitoring costs of \$1.5 million, could be avoided if the plant were decommissioned.⁶⁴ While the Sierra Club and MEIC do not cite a specific legal obligation for remediation they state that PSE’s share of “cleaning up groundwater contamination” could be as high as \$500 million.⁶⁵

The Sierra Club and MEIC filed a collection of data and reports to support their comments.⁶⁶ Staff reviewed these documents, and agree that the comments filed by PSE in this docket do not provide an estimate of the potential liabilities associated with groundwater contamination, or the costs to continue operating the plant. Staff believes that the potential costs of these liabilities are outside the scope of this investigation. However, these reports may provide useful information for the Commission if the prudence of costs associated with Colstrip’s CCR management system becomes an issue in a future proceeding.

⁶² Comments of Sierra Club and MEIC, at 1:3.

⁶³ *Id.*, Attachment 7, at 14.

⁶⁴ *Id.*, at 6:16-17.

⁶⁵ *Id.*, at 5.

⁶⁶ These reports were filed as attachments to the September 15th comments of MEIC and the Sierra Club, and are available on the Commission’s website at www.utc.wa.gov, search docket UE-151500. Many of these reports were also submitted by the Sierra Club and MEIC as litigation support in *Montana Env’tl. Info. Ctr. et al. v. Mont. Dept. of Env’tl. Quality et al.*, No. DV-12-42 (Mont. 16th Jud. Dist.).

B. Comments of the Attorney General's Office of the Public Counsel (Public Counsel)

Public Counsel filed initial comments offering key factors for the Commission to consider when determining the decommissioning and remediation costs. For example, in its initial comments, Public Counsel recommended that the Commission consider the assumptions surrounding the quantity of materials required to be removed from the site, a plan for addressing groundwater contamination, labor costs for dismantling the plant, and handling costs for hazardous materials, among other factors.⁶⁷

On November 20th, 2015, Public Counsel filed supplemental comments requesting that the Commission issue a request for additional detailed information from PSE regarding the assumptions used in its comments.⁶⁸ While Staff appreciates Public Counsel's efforts, and acknowledges that more information is needed to understand PSE's assumptions, we declined to issue this request. Given the scope of Public Counsel's request, the lack of discovery procedures in this docket, and the limited time available to conduct this investigation, Staff requested that PSE work with Public Counsel to provide responses to their requests voluntarily.

On December 30, 2015, Public Counsel filed more comments, noting that the record in this investigation does not allow the Commission to determine what decommissioning and remediation activities are necessary or required.⁶⁹ Public Counsel also commented that the investigation of costs in this docket is separate from a prudence determination or allocation of costs between shareholders and ratepayers. Acknowledging that this investigation is a starting point rather than an end point, Public Counsel states that additional information and analysis is needed in order to provide a reliable picture of the costs of decommissioning and remediation for Colstrip Units 1 & 2.

⁶⁷ Comments of Public Counsel, at 2:3.

⁶⁸ Request for Issuance of Information Request filed by Public Counsel on November 20th, 2015.

⁶⁹ Second Comments of Public Counsel, filed December 30th, 2015.

V. Other Factors

When considering the costs of closure against uncertain risks, Staff believes that it is important to distinguish between factors that could have a direct impact on decommissioning and remediation costs, and those that are more likely to impact the ongoing costs and risks of plant operation. It is also important to consider the potential impacts of closure on other system costs. This section discusses other factors raised in comments received in this investigation, which we believe present a challenge for assessing the ongoing costs and risks of continued operation of Colstrip Units 1 & 2:

*Regional Haze:*⁷⁰ Pursuant to the Clean Air Act, EPA promulgated its Regional Haze regulations, which asked various states, including Montana, to analyze sources of emissions and to develop a plan to eliminate man-made visibility impacts by 2064. In 2006, the MDEQ notified EPA that it did not intend to produce a State Implementation Plan (SIP), triggering EPA's obligation to produce a Federal Implementation Plan (FIP) for the state of Montana. EPA published a proposed FIP in April 2012, and in September 2012, the EPA issued a final FIP for Montana. The FIP required PPL Montana (former operator of Colstrip) to take various actions to reduce emissions of nitrogen oxide (NOx) and sulfur dioxide (SO2) at Colstrip units 1 & 2, as well as the J.E. Corette plant in Billings, Montana.⁷¹ For Colstrip Units 1 & 2, EPA required PPL Montana to install the best available retrofit technology (BART), determined for NOx to be separated overfire air ("SOFA") and selective non-catalytic reduction ("SNCR"). The BART for SO2 required PPL Montana to implement lime injection and a fourth "scrubber."

PPL Montana challenged the rule, arguing that it was too stringent. The National Parks Conservation Association also challenged the rule, arguing that it was not stringent enough. Both parties argued that EPA did not provide sufficient support for or logic behind the BART selection. On June 9, 2015, the United States Court of Appeals for the Ninth Circuit concluded that EPA's BART determination for NOx and SO2 emissions at Colstrip Units 1 and 2 (and Corette) was arbitrary and capricious, and remanded the rule back to EPA. As of the date of this report, EPA has taken no action on remand.

Litigation: In addition, PSE notes that, at the time of this investigation, the Colstrip facility is the subject of two separate environmental lawsuits, which could impact future decommissioning and remediation costs:

- In 2012, the Sierra Club, MEIC, and National Wildlife Federation filed a petition for review with the Montana Board of Environmental Review alleging that the Wastewater Pond AOC is an improper enforcement action under Montana's Major Facility Siting Act and Water Quality Act.⁷² While MDEQ was the original defendant, PSE states in its response that Talen intervened and removed the case to Montana state court. A bench trial is scheduled for April 18, 2016.⁷³

⁷⁰ Nat'l Parks Conservation Ass'n v. United States EPA, 788 F.3d 1134-1148 (U.S. App. 9th Cir. 2015).

⁷¹ The Regional Haze rule does not impact Colstrip Units 3 & 4.

⁷² MCA 75-20-101 et seq. and MCA 75-5-101 et seq.

⁷³ Comments of PSE, at 2.

- On May 5, 2013 the Sierra Club and MEIC filed a complaint in the Federal District Court of Montana against the owners of Colstrip for violations of the Clean Air Act. The complaint alleges that the owners of Colstrip violated Part C of the Clean Air Act by failing to obtain a Prevention of Significant Deterioration permit under the New Source Review provisions of the Clean Air Act before making “major modifications” that increase SO₂, NO₂, and particulate matter emissions. PSE is a named defendant in this pending litigation, scheduled for trial on May 31, 2016.⁷⁴

Stranded Costs: In the event that the costs of removal and AROs exceed the amount available in the depreciation reserve and the ARO liability accounts, there is a risk that costs may be unrecovered.⁷⁵ In its response, PSE acknowledged the potential that plant removal expenses and AROs may exceed the related amounts booked in the depreciation reserve and ARO liability accounts.⁷⁶ PSE further identified a rate base balance of \$120.5 million, after deducting deferred taxes, for Colstrip Units 1 & 2 as of June 30, 2015.⁷⁷ PSE may petition the Commission to recover any excess removal costs from ratepayers when it deems this necessary. The Commission can consider recovery of such costs on a case-by-case basis, allowing due process for all interested parties.

Transmission Rates: The Colstrip Transmission System is jointly owned by the owners of Colstrip, and operated by Northwestern Energy. PSE states that the Transmission System is currently almost fully subscribed.⁷⁸ The Colstrip Transmission System consists of two segments: (1) a segment between Colstrip and Broadview, MT, and (2) a segment between Broadview and Townsend, MT. If Colstrip is retired, PSE states that capacity on the Colstrip Transmission System could become available for other resources in the region. In its response, PSE states that there are projects in the transmission system’s queue seeking to use the system.⁷⁹ However, PSE states that, if Units 1 & 2 are retired and new projects do not use Unit 1 & 2’s transmission capacity, transmission rates for the power from Units 3 & 4 may increase.⁸⁰

While changes to the cost of transmission use may be a consequence of retiring Colstrip Units 1 & 2, Staff does not consider this a direct expense of decommissioning or remediating these units, and therefore regards them as outside of the scope of this investigation.

⁷⁴ *Id.*, at 1. On Oct. 13, 2015, (after PSE filed comments in this docket) the Bench Trial date was changed from March 7, 2016 to May 31, 2016.

⁷⁵ *Id.*, at 22:5-10.

⁷⁶ *Id.*, at 22:5-10.

⁷⁷ *Id.*, at 23.

⁷⁸ *Id.*, at 26:14-16.

⁷⁹ *Id.*, at 26:21 – 27:1.

⁸⁰ *Id.*, at 27.

VI. Conclusion

Staff recognizes that the comments and information received in this investigation do not provide a complete record for the Commission to precisely determine the costs of decommissioning and remediation for Colstrip Units 1 & 2. Staff did not audit PSE's accounts, nor did Staff or interested parties conduct discovery, or provide expert testimony, exhibits, or legal briefs on the data presented by PSE. However, based on the information provided by PSE in this docket, Staff concludes that the costs of known remediation obligations are expected to increase the longer the plant continues to operate. Given that the depreciable lives of the units currently extend until 2035, Staff believes that current depreciation rates are likely insufficient to recover these costs, especially if the timeline for closure is expedited. This puts both PSE and its future customers at risk.

Staff further concludes that significant uncertainty exists regarding the ultimate costs of decommissioning and remediation, including the cost of activities that are already planned or underway. PSE has stated in its comments that it is conducting an updated depreciation study, timed for inclusion in its next general rate case. Staff expects the company's depreciation study, as well as its newly recognized AROs, to be a major component of its 2016 general rate case filing. Together, the resolution of these issues could have a significant impact on customer rates. Should PSE seek to recover the costs associated with newly recognized AROs and incremental depreciation expense for cost of removal in its next general rate case, Staff recommends that the Commission ask PSE to provide detailed information about the planned decommissioning and remediation activities, the activities already underway, the actions and assumptions the company relied upon to determine its remediation obligations, and the reasonable alternatives the company considered.