

**EXHIBIT NO. ___(RJR-10)
DOCKETS UE-17___/UG-17___
2017 PSE GENERAL RATE CASE
WITNESS: RONALD J. ROBERTS**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

Docket UE-17___

Docket UG-17___

**NINTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF**

RONALD J. ROBERTS

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 13, 2017

RULES AND PROPOSED RULES

A. Mercury and Air Toxics (MATS) Rule

The U.S. Environmental Protection Agency (EPA) published the final Mercury and Air Toxics Standard (MATS) in February 2012 to reduce air pollution from coal and oil-fired power plants with a capacity equal to or greater than 25 megawatts. The MATS rule establishes emissions limitations at coal-fired power plants for mercury (1.2 lbs per trillion British thermal units, and for acid gases and certain toxic heavy metals using a particulate matter surrogate (0.03 lb per million British thermal units (MMBtu)). Coal-fired generating units had until April 2015 to comply with MATS, and they could receive up to a 1-year extension from state permitting authorities for the installation of controls if necessary.

On June 29, 2015, the United States Supreme Court held that the EPA failed to consider costs when deciding whether it was “appropriate and necessary” to regulate emissions of mercury and other hazardous air pollutants from power plants. *Michigan v. EPA*, 135 S. Ct. 2699 (2015). The Supreme Court’s decision overturned a 2014 ruling by the U.S. Court of Appeals for the District of Columbia Circuit (“D.C. Circuit”), which held that EPA’s decision not to consider costs in the initial stages of the MATS rulemaking process was reasonable. The Supreme Court remanded the decision on MATS back to the D.C. Circuit for further proceedings.

On December 15, 2015, the D.C. Circuit remanded the MATS result to EPA for additional agency proceedings without vacating the rule during the interim. *White Stallion Energy Ctr., LLC v. EPA*, No. 12-1100, 2015 WL 11051103 (D.C. Cir. Dec. 15,

2015) (per curiam). The rule remains in effect while EPA addresses the deficiencies, but the Montana Department of Environmental Quality granted Colstrip a one-year compliance extension until April 2016.

Some investments for additional particulate matter control by the Unit 1 & 2 scrubbers were required to comply with the heavy metals requirements of the MATS rule. Installation of this additional equipment (sieve trays) on Colstrip Units 1 & 2 scrubbers began in the second quarter of 2014 and was completed in the second quarter of 2016. Completion of this project brought Colstrip Units 1 & 2 into compliance with the particulate matter requirements of the MATS rule. Colstrip Units 3 & 4 scrubbers already remove the required level of particulate matter. The mercury control system installed at Colstrip to meet a previous Montana mercury rule also meets the MATS requirements for mercury capture and removal and provide a nominal 85% reduction in mercury emissions. The existing scrubbers on all four units adequately remove acid gases covered by the rule.

B. The Regional Haze Rule

Established in 1999, the Regional Haze program is a 64-year program administered by the U.S. EPA under federal law to improve visibility. Specifically, the rule is aimed at improving visibility in mandatory Class I areas (National Parks, National Forests and Wilderness Areas) and is not a health-based rule. The rule requires each state to prepare an analysis of visibility impairments to Class I areas and develop plans to eliminate man-made impairment by 2064.

Major sources that began construction before 1977 (including Colstrip Units 1 & 2) must bring emission controls to Best Available Retrofit Technology (BART) standards during the initial review cycle. “Reasonable Progress” requirements call for an updated analysis of impacts every five years. It requires states to constantly decrease haze in certain scenic areas of the country over time according to a “Glide Path.” Power plant emissions contributing to haze are evaluated in phases every 10 years and more stringent emission controls are required as needed to stay below the Glide Path. States can take on regional haze analysis directly and develop a State Implementation Plan (SIP) or states can defer to EPA to establish a Federal Implementation Plan (FIP) for their state. In 2006, Montana deferred to EPA to develop the FIP for the first 10 year phase of the program, 2008-2018.

Under Montana’s FIP, established in August 2012, EPA determined that Colstrip emissions have impacts to at least two Class I areas within 300 kilometers, including the Theodore Roosevelt National Park and UL Bend National Wildlife Refuge. As a result, EPA determined that only Colstrip Units 1 & 2 required additional emissions controls under regional haze including additional sulfur dioxide and nitrogen oxide limits. EPA determined that Colstrip Units 3 & 4 were exempt from requirements under the first 10-year phase.

The Sierra Club filed an appeal of EPA’s FIP with the United States Court of Appeals for the Ninth Circuit on November 15, 2012, and Talen Energy also filed an appeal as the Colstrip operator. The case was heard in 2014, and a final decision was issued by the Ninth Circuit on June 9, 2015. *National Parks Conservation Ass’n v. EPA*, 788 F.3d 1134 (9th Cir. 2015). The Ninth Circuit held that EPA had not adequately

justified the need for two of the control technologies and remanded these two issues back to EPA for reconsideration.

The ruling in no way affects the future planning periods for the Regional Haze program or Montana's Glide Path. EPA's current assessment of Montana's Glide Path will require significant emission reductions to meet the natural visibility goal by 2064. Thus, additional emission reductions from current levels would likely be necessary in future 10-year planning periods beginning in the second planning period which was initially scheduled 2018-2028 (but necessary reductions will likely be met once Colstrip Units 1 & 2 are retired). On December 14, 2017, EPA issued a rule updating the regional Haze second planning period implementation plan submittal deadline from July 2018 to July 2021, but the July 2028 end period for the second planning period remains (the rule is pending publication in the Federal Register). In the meantime, Montana has indicated that it plans to work on and submit a State Implementation Plan for the second planning period.

C. Coal Combustion Residuals Rule

On April 17, 2015, the EPA published a final rule, effective October 19, 2015, that regulates coal combustion residuals ("CCRs") under the Resource Conservation and Recovery Act, Subtitle D. The CCR rule addresses the risks from coal ash disposal, such as leaking of contaminants into ground water, blowing of contaminants into the air as dust, and the catastrophic failure of coal ash containment structures by establishing technical design, operation and maintenance, closure and post-closure care requirements for CCR landfills and surface impoundments, and corrective action requirements for any related leakage. The rule also sets out recordkeeping and reporting requirements

including posting specific information related to CCR surface impoundments and landfills to a publicly-accessible websites. Using information from these public websites, enforcement of the CCR rule is left entirely to citizens' lawsuits – not EPA.

The U.S. Senate passed legislation on December 10, 2016, however, that is now awaiting Presidential signature that would allow a state to take over the CCR program including enforcement or EPA could take over enforcement (assuming Congress grants necessary funding). This would not eliminate the threat of citizen suits, but minimize the threat if an agency is appropriately enforcing the law and hence could provide more certainty on compliance interpretations and ultimate compliance.

Specifically, the current EPA CCR rule includes requirements that address the risk of catastrophic failure (structural integrity requirements); groundwater protection (monitoring, corrective action, liner design criteria and siting restrictions); surface water and air protection (operating criteria); record keeping, notification and internet posting, inactive units and closure and post closure care of CCR units. Work to achieve compliance at Colstrip with the CCR rule has already begun including posting of a public website with CCR unit information as well as a planning to address all requirements.

D. Clean Water Act

1. Cooling water intake and discharge.

The EPA finalized the changes to Section 316(b) of the Clean Water Act that apply to power plant standards in May 2014. The rule requires power plants to install any one of a variety of technologies to reduce the amount of fish and other aquatic life killed by cooling water intake pipes. Environmental groups filed three separate challenges to

the rule on September 2, 2014. They contend that the EPA gave utilities too much flexibility in finding a way to comply. On September 4, 2014, Entergy Corporation and the Utility Water Act Group, a coalition of 191 energy companies and three utility trade associations, filed a joint challenge on behalf of utility companies. This lawsuit is still pending before the Fourth Circuit Court of Appeals.

The rule's requirements address these potential impacts:

- Existing facilities with a design intake flow of greater than 2 million gallons per day, where more than 25 percent is used for cooling, are required to select from 9 compliance options related to impingement mortality.
- Existing facilities that withdraw at least 125 million gallons per day are required to monitor entrainment and assess the costs, benefits and other adverse environmental impacts of measures for reducing entrainment mortality. Based on these reports, the regulatory agency selects the best technology available for reducing entrainment mortality at a facility.
- New units that add electrical generation capacity at an existing facility are required to install technologies that reduce impingement and entrainment to a level equivalent to closed-cycle cooling.

2. Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category

On September 30, 2015, the EPA finalized a rule to regulate wastewater discharges from power plants. The new rule sets limits on dissolved pollutants permitted in these discharges, and focus on mercury, selenium, and arsenic (toxic metals previously unregulated in this context).

The finalized rule applies to all steam electric power plants, except for those smaller than 50 megawatts in production capacity, and oil-fired plants. Out of

approximately 1,080 steam electric power plants in the U.S., 134 are expected to require new investments in order to comply with the regulations. The regulations will take effect in 2018, and compliance will be phased in through 2023.

Along with effluent limits on toxic metals and dissolved solids, the rule establishes zero discharge limits on pollutants in ash transport water and flue gas mercury control wastewater. Many units in the Pacific Northwest will be compliant with the rule provisions with their current controls, and therefore will not incur additional compliance costs. Colstrip is a Zero Liquid Discharge (ZLD) facility, so it will not be affected by the rule.

E. The Clean Air Act

1. National Ambient Air Quality Standards (NAAQS)

Two types of national air quality standards are established by the Clean Air Act. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation and buildings. These ambient level standards apply uniformly throughout the states. The Clean Air Act required EPA to set NAAQS for widespread pollutants from numerous and diverse sources considered harmful to public health and the environment. EPA has set NAAQS for six "criteria" pollutants; periodic review of the standards and the science on which they are based is required. Each time the NAAQS are revised, the states must evaluate whether any parts of the state exceed the standard (these are "non-attainment" areas). If a state contains any non-attainment areas, it must propose a plan and schedule to reduce emissions in order to achieve attainment approval by the

EPA. Currently the Colstrip area of Montana is in attainment for all criteria pollutants. Reductions in Colstrip emissions for SO₂, NO_x and PM to meet the MATS Rule and the EPA FIP are expected to keep the area in attainment with any NAAQS revisions with no further actions required. For more information, go to <http://www.epa.gov/ttn/naaqs/criteria.html>.

2. Section 111(d) of the Clean Air Act.

In June 2014, the EPA issued a proposed Clean Power Plan (“CPP”) rule under Section 111(d) of the Clean Air Act designed to regulate greenhouse gas emissions from existing power plants. EPA issued a final Section 111(d) rule on August 3, 2015, which included several changes, many of which were requested in PSE’s comments. Specifically, EPA excluded energy efficiency from the building blocks, leaving just three building blocks (increased efficiency for coal plants, greater utilization of natural gas plants and increased renewable sources), and provided more flexibility on interim goals by phasing in the reduction of the second building block and giving states the option to set their own interim compliance glide path and pushing the start of compliance to 2022. EPA also adjusted the 2012 baseline to address hydroelectricity variability and provided specific CO₂ mass targets by year for each state.

EPA grants states broad flexibility to pick a rate-based or mass-based approach and can design compliance options and decide how to allocate credits and whether to allow trading. EPA also gave states the option of seeking additional time, if necessary, to formulate a state plan---states must submit something within one year but can request up to an additional two years for development of a state plan.

Based on the changes to the final rule, the final CO₂ goal for Montana became 26 percent more stringent and the final CO₂ goal for Washington became 35 percent less stringent. By 2030 Montana must reduce CO₂ emissions from coal plants from 20.5 million tons of CO₂ to 11.3 million tons of CO₂ which is a 45 percent reduction in CO₂ emissions. How this will affect Colstrip cannot be determined until a state implementation plan for Montana is finalized and approved by EPA. Regardless, the shutdown of Colstrip Units 1 & 2 in July 2022 will contribute significantly towards meeting Montana's final CO₂ goal.

Several legal challenges to the Clean Power Plan were filed after the final rule was issued. In February 2016 the U.S. Supreme Court granted a stay of the rule until the case is decided on the merits. Order, *State of West Virginia v. Environmental Protection Agency*, No. 15A773 (Feb. 9, 2016). EPA, however, has encouraged states to continue work on their plans assuming that the 2022 compliance date would not change and that the CPP will be upheld. It is not yet clear whether or how the election of Donald Trump as the 45th President of the United States may or may not affect the implementation of the CPP. PSE will comply with all laws and regulations and therefore must plan for implementation of the CPP until there is certainty.