Comments of Anne Hedges. Program Director
Montana Environmental Information Center
Prepared for the State of Washington Utilities and Transportation Commission
RE: Puget Sound Energy, Inc., 2013 Integrated Resource Plan,
Dockets UE-120767 and UG-120768
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Good afternoon Council Members. My name is Anne Hedges, Program Director of the Montana Environmental Information Center. Today I would like to focus my testimony on Appendix J, the appendix that discusses Puget Sound Energy's interest in the Colstrip plant.

Operating, maintaining, and remediating Colstrip is costly and those costs are increasing. MEIC believes Appendix J does not adequately address these costs either in the Case 2 –Mid Cost Scenario or in any other scenario listed. The owners of Colstrip have deferred maintenance for decades and PSE's 2013 IRP attempts to continue that trend. From the 800 acres of sludge impoundments that have been leaking since they were built, to the antiquated air pollution controls that we believe have not been adequately and legally updated since they were installed in the 1970s and '80's, the air and water contamination problems at the plant are mounting and the costs to address these issues rise with each passing day.

It is time for PSE and the other owners of Colstrip to step up, admit the problems that exist at the plant, and plan for the future. This proposed IRP simply relies on deferred maintenance. That deferment has real world impacts in Montana for people's health, their livelihoods, and our air and water resources. It's time for Washington to take responsibility for the problem. Out of sight simply cannot continue to mean out of mind.

COAL ASH LIABILITIES

Coal ash at Colstrip is sent as slurry to an extensive system of waste impoundments. According to the state, these impoundments have been leaking since they were built. The company has developed an elaborate groundwater monitoring system surrounding these impoundments. When monitor wells demonstrate that groundwater is being contaminated with leaking sludge, the monitoring wells are turned into pump back wells that simply pump the contaminated water back into the waste impoundments. This is not cleanup. This is deferred maintenance. Already the Colstrip owners have paid well over $25 million to landowners in the area whose water is contaminated. That's $25 million that didn't even begin to address the cost of cleanup. These cleanup costs will not be insignificant despite the analysis in Appendix J.

Last year, the state entered into an administrative order on consent with Colstrip's owners to address groundwater contamination. That order is described in Appendix J. Appendix J states that the first step in the process for wastewater remediation is site characterization. Unfortunately, a recent site characterization report does not characterize the site at all. It does not include basic characterization of the geographic extent of the contaminated plumes, whether the plumes are growing in concentration or size, the concentrations of the

pollutants at the edge of the plumes, and in what directions the plumes are heading. In short, the site characterization report does not characterize the site at all. Instead it jumps to the conclusion that remediation efforts (a.k.a. the pump-back system) are working. Unfortunately, that is not the case.

We asked a geohydrologist to review the site characterization report for one of the three waste impoundment areas. Among other conclusions, the geohydrologist found:

- The apparent size of the groundwater plumes continues to expand.
- The location of the leading edge and concentration gradients within the plumes are not identified.
- The assessment of calculated improvements in groundwater quality is based only on measured specific conductance in pumping wells. Monitoring data provides several examples where concentrations of other parameters like boron, sulfate, or chloride have increased while specific conductance has decreased. Basing the assessment of improvements on only one parameter that may or may not reflect groundwater quality ... is highly suspect.
- A mass balance for process water constituents has apparently not been done.

Geo-Hydro, Inc., Comments on the Colstrip Stage I and II Evaporation Ponds Report, July 24, 2013.

The company cherry picked data points in an attempt to demonstrate its efforts to stop contamination are successful, when in fact it failed to even conduct the most basic characterization of the problems at the site, let alone explain increasing contamination levels of particular pollutants.

Appendix J concludes, "Since 2000, the six Colstrip owners have spent $97 million to control ash pond leakage, reduce migration of affected groundwater, and to upgrade plant wastewater systems to allow increased recycling of water." (Appendix J at J – 8) For unknown reasons, the only cost associated with cleanup of the impoundments in PSE's assessment assumes costs resulting from potential *federal* regulation of coal ash by 2018, it completely ignores any state requirements.

Appendix J briefly mentions the state's cleanup order but mysteriously attributes no cost to that order. The mid-cost scenario only anticipates spending $14 million on the coal ash impoundments, with a measly $1 million of fixed annual operating costs *if* federal requirements are enacted. Since state law requires cleanup, and since Colstrip's owners have already spent $97 million and have yet to even characterize the site or the contamination plumes leaving the impoundments, it is absurd to assume actual site characterization, planning, and remediation of contaminated groundwater will be achieved at so little cost.

Our frustration with this process cannot be overstated. We have been forced to challenge the state's order in court. That litigation is ongoing and will hopefully result in a complete remediation of these leaking impoundments. PSE's cost analysis failed to even address

state level requirements. We intend to use state law to require cleanup of these massive impoundments systems so Montanans are not left with a Superfund site.

AIR POLLUTION CONTROL COSTS

Colstrip emits more nitrogen oxides, sulfur dioxide and carbon dioxide than the combined emissions of all other permitted sources of air pollution in Montana. In one recent year Colstrip emitted over 15,000 tons of sulfur dioxide, 18,000 tons of nitrogen oxides, and 17 million tons of carbon dioxide. These enormous emissions levels are harmful to public health. Those costs are not accounted for in any cost scenario because those costs are borne by those who live near the plant and downwind. Appendix J only attempts to account for the predicted cost to control air pollution in coming years. It fails in that analysis as well.

Nitrogen Oxides (NOx)

The Mid Cost scenario assumes that modern nitrogen oxide controls will never be installed at Colstrip. This is unreasonable. The Very High Cost scenario shows modern NOx controls will not be installed for nearly 10 years – 2022. This is unreasonable as well. Selective Catalytic Reduction (SCR) is the industry standard. It has been installed on over 340 units across the country, include a coal burning unit in Montana. The Low Cost analysis should include installation of controls to adequately limit NOx emissions. MEIC is involved in two separate enforcement actions against state and federal regulators that could result in a requirement for Colstrip to install SCR. We believe the likelihood of requiring industry standard NOx controls is very high and should be reflected in every cost analysis scenario.

Sulfur Dioxide (SO2)

Appendix J's Mid Cost analysis assumes that Colstrip's SO2 emissions will need no additional control for compliance with National Ambient Air Quality Standards and only minimal upgrades for regional haze requirements. While Colstrip's existing SO2 controls may have been state-of-the-art upon installation 30 years ago, they are hardly state-of-the-art today. Appendix J claims the SO2 controls at the plant get anywhere from 70-90% emissions reductions. The Institute for Clean Air Companies, a national trade organization that represents suppliers of air pollution control systems, claims: "New wet scrubbers routinely achieve SO2 removal efficiencies of 95%, with some scrubbers achieving removal efficiencies of up to 99%." (http://www.icac.com/?Acid_Gas_SO2_Control). In other words, SO2 controls at Colstrip can be far better.

Another issue facing Colstrip is compliance with ambient air quality standards. Because of the enormous volume of SO2 emissions at Colstrip, we hired a consultant to model Colstrip's compliance with EPA's new 1-hr SO2 standard. That expert modeling showed violations of this new health-based standard.

Incredibly, there is no ambient air quality monitor in Colstrip. Instead, modeling is the only tool available to show compliance or noncompliance with the standard. Although modeling demonstrates violations of the standard, in Appendix J even in the Very High Cost scenario attributes no cost for compliance with the new SO2 standard. Instead PSE's analysis assumes that compliance with this new standard will be achieved by complying with other

rules. This conclusion is in error. First, this conclusion is reached without providing any additional analysis or potential emission rates that would be required under other rules, nor does it provide modeling scenarios to show compliance with the standard. Second, Appendix J concludes that no rule will require any expenditure for SO2 controls on Units 3 & 4, the largest emitting units at Colstrip. Not only is it premature to say there will be not costs for SO2 ambient air standard compliance at Colstrip, it is also false to claim that SO2 reductions will be required under other rules, when no rule listed requires controls on the two largest units at Colstrip.

This plan has similar deficiencies in regard to particulate control, mercury control and hazardous air pollution control, but in the interest of time I will only refer to my previous comments.

HIGH and SIGNIFICANT HAZARD DAMS

Finally, the Colstrip coal sludge impoundments have been defined by EPA as high and significant hazard dams because of the potential loss of life and property should any of them fail.

> Of these on-site ponds, only the Units 1 & 2 Pond "A" and the Units 1 & 2 Bottom Ash Pond were considered by PPL to be significant hazard impoundments, with the potential for flooding of the town of Colstrip and potential loss of life following a breach. The remaining ponds are not included in this report because they are considered to be low- or less-than-low hazard, either because they have been removed from service or are closed, they are incised (all material storage capacity is below grade), the storage capacity is small, and/or their contained coal combustion waste materials are not likely to travel a significant distance within or outside the plant in the event of a spill.
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> In addition to the on-site impoundments, the Colstrip plant has two major impoundments located several miles from the power plant. The Units 1 & 2 Stage Two Evaporation Pond (STEP) is located approximately two miles northwest of the plant, and the Units 3 & 4 Effluent Holding Pond (EHP) is located approximately 3.5 miles southeast of the plant. The Units 1 & 2 STEP was classified as a high hazard impoundment due to the potential for loss of life in the event of a dam breach because of the close proximity of residences within the flood inundation area. The Units 3 & 4 EHP was classified as Low Hazard based on an inundation study (Maxim, 2005). However, GEI recommends the EHP be reclassified as Significant Hazard based on the likelihood of significant economic/environmental cost associated with a dam breach. As a result, the Units 3 & 4 EHP was included in the specific site assessment." (Emphasis added.)

GEI Consultants, Inc. 091330 Coal Ash Impoundment Specific Site Assessment, FINAL Report - PPL Montana: Colstrip Power Plant, September 2009.

When we investigated the status of the Colstrip High and Significant Hazard dams, we discovered that these dams have *NEVER* been inspected by a state or federal regulatory

agency and that as of 2009 an assessment of structural integrity had not been completed since original design and construction. Our dam safety unit in the state does not regulate these dams. Instead we rely on a program that is understaffed and does not have the expertise to manage dam safety issues.

In regard to dam safety, we worry about the hazard this poses to people's lives, property and livelihoods. Recent coal sludge impoundment failures demonstrate the financial risk such failures pose to communities and utilities. PSE and the UTC should worry about these risks as well and include the risk in the analysis of Colstrip's costs to the utility and ratepayers.

CONCLUSION

These are just a few of the examples of the liabilities that are mounting at Colstrip. These potential costs should be incorporated into the cost of doing business for Colstrip's owners, particularly Puget Sound Energy, the largest investor in the plant. We believe the Case 2 – Mid Cost scenario is insufficient to account for the costs of bringing this plant into the modern age of air pollution controls and groundwater remediation. The time to address these problems is now. Continuing to defer maintenance or ignoring obvious costs at Colstrip will only cost more in the long run.