

Washington Utilities and Transportation Commission  
August 11, 2011 Open Meeting on  
Puget Sound Energy's 2011 Integrated Resource Plan

Comments by Doug Howell, Sierra Club

Good afternoon. Thank you for the opportunity to comment on Puget Sound Energy's (PSE) 2011 Integrated Resource Plan (IRP).

My name is Doug Howell and I am a senior campaign representative for Sierra Club's Beyond Coal campaign. The Sierra Club is the nation's oldest and largest conservation group founded in 1892 by John Muir.

I am here today to present our concerns about PSE's coal plant in Colstrip, Montana. We ask the Commission to request full disclosure about Colstrip's environmental liabilities. We believe that Colstrip is not the lowest reasonable cost resource for ratepayers.

We are concerned that PSE will seek reimbursement for major environmental compliance in Colstrip when cheaper and cleaner alternatives are available. The best way to avoid any unnecessary investments into a losing investment is to have full disclosure about all the cost liabilities, and in the case of Colstrip, environmental liabilities.

We are pleased that there are number of conservation groups in Montana who have invested time and resources reviewing the environmental liabilities at Colstrip. Some of those groups include:

- Montana Environmental Information Center
- National Parks Conservation Association
- Western Environmental Law Center
- Western Clean Energy Campaign
- Earthjustice
- Rainforest Action Network
- Resource Media
- Wild Earth Guardians
- Northern Plains Resource Council

Other groups have been active and we expect that many more groups and individuals will get engaged.

Colstrip is the leading individual source of greenhouse gas emissions in the Northwest. It is a leading source of nitrogen oxides, mercury and other toxic substances. It may well be the dirtiest plant in the entire Northwest and certainly is a significant source of environmental and public health impacts on water, air and land.

From PSE's 2009 and 2011 Integrated Resource Plan, the Commission is aware of potential liabilities from greenhouse gas emissions for the Colstrip plant. Unfortunately, the Congress failed to pass climate legislation and we are hopeful that the Congress and the Obama Administration will ensure action in the future.

But today I will address other liabilities at Colstrip and its mine which are the source of significant public health and environmental damage.

#### Liabilities

1. Haze / NOx
2. Coal Ash
3. Mining contamination of water
4. Costs of new coal resources
5. Hazardous Air Pollutants
6. Water pollution
7. Major modifications

These are not the only liabilities for the plant and mine. And unless a full accounting is done of these and other problems, we fear PSE may fall down the slippery slope of throwing good money into a losing investment. We are confident that there are cheaper and cleaner alternatives for ratepayers.

#### Haze / NOx

I was surprised to find little coverage of liabilities associated with haze-causing emissions in PSE's IRP. A final decision on controlling Colstrip's haze emissions is required by June 2012, yet I found no mention of this in the IRP.

Colstrip causes or contributes to visibility impairment at a number of Class I national parks and wilderness areas: UL Bend, North Absaroka Wilderness Area, Theodore Roosevelt National Park, Washakie Wilderness Area and Yellowstone National Park. Because of the number of public lands impacted and the level of cumulative impact (combined visibility impact on all of these class I areas), the analysis by the U.S. Environmental Protection Agency (EPA) must favor reducing Colstrip's emissions with adequate, modern control technologies.

Emissions of nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM) are each visibility impairing pollutants at Colstrip that will require EPA pollution control determinations. Selective Catalytic Reduction (SCR) is the appropriate technology to limit NO<sub>x</sub> emissions at Units 1 and 2, and under “reasonable progress” for Units 3 and 4; lesser technology options are incapable of achieving required visibility benefits. This is but one example of a pollution control that EPA must require at Colstrip to comply with the visibility protection mandate of the Clean Air Act.

In 2008, PSE said that putting SCR on Units 1 and 2 would require roughly \$60.0 million in capital costs, plus annual operating and maintenance costs of approximately \$10 million. Their estimate didn’t include some factors like shared equipment between units, changes in cost since 2008, and retrofit complexities, that could *lower or raise* that estimated cost.

Installing SCR on Units 3 and 4, would entail additional expansion of costs. Units 3 and 4 are more than twice the size of Units 1 and 2. Based on the estimates for Units 1 and 2, the \$60 million capital costs could increase to \$180 million plus annual operating expenses when including Units 3 and 4. Some economies of scale are likely, and Units 3 and 4 are newer, so this is a rough estimate.

There are limited examples for comparing costs. However, the San Juan coal plant in New Mexico, which is of comparable size to Colstrip, was recently required to install the SCR technology at each of its four units with a capital cost of \$750 million.

The visibility protection mandate unequivocally requires aged sources like Colstrip to mitigate their haze causing emissions. The actual cost for Colstrip is unknown but certainly merits more disclosure by the PSE to the UTC if PSC is to disclose its full suite of regulatory liabilities.

### Coal Ash

The ash disposal ponds and associated wastewater facilities at the Colstrip Steam Electric Station are operated in well-documented violation of state and federal law.<sup>1</sup>

Since the waste ponds were constructed, they have been leaking highly contaminated effluent into groundwater, polluting both ground and surface water in the vicinity of the power plant and the town of Colstrip, Montana. This waste consists of highly toxic compounds, including arsenic, cadmium, chromium, lead, mercury, selenium, and

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<sup>1</sup> Env'tl. Integrity Project and Earthjustice, Out of Control: Mounting Damages From Coal Ash Waste Sites, at 31-36, Feb. 24, 2010. And: Montana Department of Environmental Quality (DEQ), Colstrip Steam Electric Station, Proposed Administrative Order on Consent (February 2010) available at <http://www.deq.mt.gov/mfs/ColstripSteamElectricStation/default.mcp.x>.

thallium. These substances can cause cancer, nervous system damage, and organ failure.

Groundwater monitoring has demonstrated concentrations of selenium and arsenic that exceed Montana water quality standards. High concentrations of boron, sulfate, and other contaminants have rendered groundwater unsuitable for drinking and some agricultural uses.

Some of the waste ponds are subject to a requirement that they be “completely sealed.” However, Pennsylvania Power and Light, Montana’s (PPLM) “closed-loop system” operates on the assumption that the ponds will leak. A network of monitoring wells was installed around Colstrip’s wastewater facilities to detect contaminants in groundwater. When contaminants turned up, however, PPLM and its predecessors simply drilled new monitoring wells further afield and converted the contaminated wells into “pump-back” wells.

Colstrip’s operators pump millions of gallons of groundwater from these wells and place it back into the leaking holding ponds. When the system fails to contain the contamination, as has been the case since the system has been in place, and contamination is detected in the new monitoring wells, Colstrip’s operators convert those wells to pump-back wells, and so on.

The plant’s owners already have paid a \$25 million settlement to 57 Colstrip residents whose well-water was rendered undrinkable by the leaking waste ponds. There was a financial settlement but the problem was not solved and continues to get worse.

Colstrip may be subject to federal, state, and citizen enforcement of state and federal law, including the state Major Facility Siting Act, federal Clean Water Act, and federal Resource Conservation and Recovery Act.

Enforcement of the law will require Colstrip’s owners to remediate existing groundwater contamination and prevent additional contamination. Effective remediation *of existing contamination* would require PPLM to pump and treat contaminated groundwater, and restore clean water to the aquifer. Effective prevention *of ongoing contamination* would require Colstrip’s owners to dewater, line, and cap existing ponds to reduce groundwater seepage from the decades of coal ash slurry and wastewater currently stored.

According to data supplied by the Colstrip owners, the “paste” that is currently being used is no more effective at preventing groundwater contamination than clay. EPA has determined that only heavy plastic liners effectively reduce risks. The safest solution is to stop using wet storage all together and convert to dry handling.

This coal ash problem exposes Colstrip’s owners, including PSE, to substantial environmental liabilities and remediation costs.

### Surface Mining Contamination of Water

Conservation groups reviewing coal mines in Montana, including the Rosebud Mine which feeds Colstrip, have become very concerned that Montana's Department of Environmental Quality (DEQ) is not adequately ensuring that past and continued operation of these mines is not contaminating ground and surface water. Reports from ranchers in the area indicate that the groundwater is becoming unusable for stock watering. Additionally, streams that already have degraded water quality are not being properly protected; instead, the mines are adding to the problems.

These issues of water quality are not just problems for those living and working around the mine whose water is being degraded, they are issues for the mine operators as well, because they represent violations of both the Surface Mining Control and Reclamation Act, the Montana Strip and Underground Mine Reclamation Act, and the Clean Water Act. As such, the company is open to the threat of litigation, or increased regulation should DEQ decide to hold the company accountable.

Given that Rosebud provides all the coal for Colstrip, if coal prices at Rosebud increase, or if Colstrip is required to import coal from another mine, these issues will assuredly affect the economics of continued operation of Colstrip. Coal mining is a dirty business with many impacts on communities and the environment; the costs and liabilities of mining to feed coal-fired power plants cannot be discounted.

### Costs of Coal Transportation

Preliminary investigation provides some rough estimates of increased costs of coal if Rosebud mine cannot provide coal to Colstrip. The estimates need to be taken for what they are: rough estimates. However, the investigation has raised some very legitimate questions that need to be fully examined.

The Energy Information Administration (EIA) has access to coal transportation information (See: <http://www.eia.gov/coal/transportationrates/>), and has released information on transportation costs in a rather detailed format at a *national* level. We certainly can calculate a range of costs in transporting coal into Montana. The Surface Transportation Board estimates that, nationally, Powder River Basin (PRB) coal costs approximately \$.010 per ton-mile.

Utilizing this national average of \$.010 per ton-mile for PRB coal, and estimating an average shipping distance of 266 miles (the estimated track distance from the Decker mine to Colstrip on the Burlington Northern Route), a ton of coal would cost approximately \$2.66 to ship to Colstrip (266 X \$.010).

Assuming that Colstrip maintains its current operating capacity, they will require approximately 9.2 million tons of coal annually to operate all four units. This would

amount to an increased operating cost of **\$24.47 million annually** to maintain current energy production levels at Colstrip (9.2 x 2.66).

The shipping distance from the Decker Mine to Colstrip using the proposed Tongue River Railroad and the Burlington Northern Railroad is approximately 166 miles. Using the previous calculations, the cost to ship one ton of coal on this route will be \$1.66 and the increased operating cost for Colstrip will be approximately **\$15.3 million annually**.

#### Hazardous Air Pollutants

Currently Montana law requires Colstrip to emit no more than 0.9 lbs/Tbtu of mercury on a 12-month rolling average. Since January 2010 PPLM has successfully operated mercury control technology to meet this standard. Montana law does not require coal-fired power plants to control other hazardous air pollutants.

In March 2011, the U.S. Environmental Protection Agency proposed a rule that would require coal plants like Colstrip to control a broader array of hazardous air pollutants. In regards to mercury emissions, the proposed federal standard is numerically slightly weaker than Montana's requirement but the proposed federal rule has a far shorter averaging time. The shorter averaging time will likely make the federal standard slightly more stringent than Montana's current mercury requirement. This could require additional control of mercury emissions.

The more significant impact of the proposed federal rule for Colstrip regards the non-mercury pollutants. The federal rule proposes to regulate a number of pollutants that are currently uncontrolled at the Colstrip complex. EPA's proposed rule includes regulation of currently unregulated pollutants such as acid gases, non-mercury metallic toxic pollutants such as arsenic and chromium, and organic air toxics including dioxin. The control of these additional pollutants may well require additional pollution controls at Colstrip.

#### Additional Water Issue: Discharge permit

Regarding the need for PPLM to get a water discharge permit for discharges into waters of the State, Earthjustice wrote the following on our behalf Montana Environmental Information Center and the Sierra Club in the attached letter to DEQ on April 12, 2010:

#### D. The Montana Water Quality Act and Federal Clean Water Act Prohibit Unpermitted Discharges to Surface Waters

The Colstrip waste ponds discharge pollutants to surface waters in violation of the Montana Water Quality Act, Mont. Code Ann. § 75-5-605, and the federal Clean Water Act, 33 U.S.C. §§ 1311(a), 1342(a). After pollutants seep from the ponds into groundwater, the pollutants are carried down gradient and, in some cases, into surface waters. See Gay Report at 3, ¶ 10. "[C]ontaminants in groundwater originating from

process storage ponds at Colstrip are influencing surface water quality.” Id. At a minimum, contaminated groundwater is entering the East Fork of Armells Creek, which flows into the Yellowstone River. See id.

PPLM is prohibited from causing pollutant discharges to surface waters without a permit. Mont. Code Ann. § 75-5-605; 33 U.S.C. §§ 1311(a), 1342(a). EPA has determined that the Clean Water Act “regulate[s] discharges to surface water which occur via ground water because of a direct hydrologic connection between the contaminated ground water and nearby surface water.” 66 Fed. Reg. 2,960, 3,016 (Jan. 12, 2001); see also Idaho Rural Council v. Bosma, 143 F. Supp. 2d 1169, 1180 (D. Idaho 2001) (“the [Clean Water Act] extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States.”).

PPLM has not obtained a permit to discharge pollutants to surface water. Accordingly, its discharges to the East Fork of Armells Creek and other surface water bodies through groundwater are unlawful.

#### E. PPLM Must Obtain an Industrial Stormwater Permit

Montana regulations require industrial dischargers of stormwater to obtain an MPDES permit for such discharges. ARM 17.30.1105. Because PPLM has failed to do so, its operations violate state law and it is subject to administrative and civil penalties for each day of violation. Just like the Colstrip waste ponds, industrial stormwater from the plant’s facilities contaminates ground and surface water with heavy metals and other pollutants. Because these discharges are unpermitted, they have not been subjected to monitoring requirements or control measures, thus exacerbating ground and surface water pollution in the vicinity of the power plant. DEQ must require PPLM to obtain a stormwater permit in connection with the present AOC or in a separate enforcement action.

#### Major Modifications and Compliance

If the Colstrip owners plan to operate the Colstrip coal plant through 2035 or longer, then there are certain to be many major modifications needed to maintain the boilers and ancillary equipment. However, as far as we understand the public record, the last time Colstrip secured a Clean Air Act permit under the Prevention of Significant Deterioration program was in 1979 — over 31 years ago.

Accordingly, Commissioners and ratepayer need to understand the magnitude and details of at least two sets of costs. The first is the cost of necessary upgrades to run the coal-fired boilers through 2035-45. The second is the cost to upgrade the facility so that it emits no more pollution than would be allowed under the Best Available Control Technology (BACT).

To understand what is required to undertake and apply BACT, PSE should be required to present for the Commission’s consideration prior to its next rate case on Colstrip a study that describes, in detail and in chronological order -- with a delineation of the

costs thereof -- the prior pollution controls that have been put in place on each boiler and the regulatory requirement, if any, that such control was designed to meet. The study should then describe what is necessary to be done, boiler by boiler, to apply BACT.

To understand the costs of necessary upgrades, PSE should be required to present for the Commission's consideration prior to its next rate case on Colstrip a study that should describe, in detail and in chronological order -- with a delineation of the costs thereof — modifications that have been made to date, boiler by boiler.

Commissioners also need to understand that if Colstrip did, in fact, undertake major modifications without securing the necessary permits, then it may be subject to the imposition of very steep fines (\$25,000 per day per violation) in the event of an enforcement action by EPA or by citizens, plus the requirement to now apply BACT (or shut operations). If, however, Colstrip has failed to undertake major modifications for three decades, then Sierra Club anticipates that there will be especially high costs in the future to allow these units to operate well past their designed shelf life. Either way, ratepayers are going to be hit with exceptionally high added costs unless PSE can divest itself from continued reliance on dirty coal from Colstrip.

### Conclusion

The environmental liabilities outlined above are not necessarily the exhaustive list of damages and costs. There may be additional requirements for sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM), as well as other damage that has not yet be discovered or revealed.

What we do know is that the environmental damage from Colstrip and the Rosebud mine is extensive. Most of this damaged has perpetuated with little attention or intervention. Now many more conservation groups are committed to fully understanding this environmental damage. Our hope is that the Commission is equally committed to getting full disclosure about this public health and environmental damage.

I would like to end this presentation where I started. We are concerned that PSE may begin to make investments into environmental compliance only to discover that cheaper and cleaner alternatives are available. We encourage the Commissioners to use this review of PSE's IRP to press PSE for answers on the full extent of environmental liabilities and compliance costs.

Ratepayers do not want to be saddle with an endless list of environmental compliance for an aging and inefficient coal plant when cheaper and cleaner alternatives are available. It is only with a comprehensive review and disclosure of the environmental liabilities of Colstrip that there can be fair comparison to alternative power resources.

Thank you.