

**BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**Docket Nos. UE-111048 and UG-111049  
Puget Sound Energy, Inc.'s  
2011 General Rate Case**

**SIERRA CLUB DATA REQUEST NO. 03.03**

**“CONFIDENTIAL” Table of Contents**

<b>DR NO.</b>	<b>“CONFIDENTIAL” Material</b>
<b>03.03</b>	Attachment A to PSE's First Supplemental Response to Sierra Club Data Request No. 03.03 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

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Reference Attachment A to PSE's Response to Sierra Club Data Request No. 01.19. Provide all cost estimates and/or planning documents that support the summaries provided in cells in the column labeled "Future of Colstrip" for each of the following rows:

- a. Regional Haze Rule & Best Available Retrofit Technology. Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
- b. National Ambient Air Quality Standards (NAAQA). Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
- c. Maximum Control Technology (MACT) for Hazardous Air Pollutants (HAPs). Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
- d. Tailoring Rule. Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
- e. Clean Water Act Sec. 316(b) – Protection of aquatic life. Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated

- range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
- f. Coal Combustion Residual Rule (CCR). Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
  - g. Steam Electric Effluent Guidelines & Limitation. Provide a forecast or range of cost estimates that PSE anticipates may be necessary to comply with this rule. Sierra Club understands that this estimate may depend on changes to the final rule, and Sierra Club therefore requests that PSE provide the estimated range of potential costs to comply. If PSE has not developed such forecasts or estimates, please state that it has not done so.
  - h. To the extent that PSE claims that any of the documents responsive to this data request are protected by attorney-client privileged or attorney work product doctrine, provide a privilege log identifying such documents.

### **First Supplemental Response:**

Puget Sound Energy, Inc. ("PSE") renews its objection to Sierra Club Data Request No. 3.03 to the extent it seeks information that is neither relevant to the issues in this proceeding nor reasonably calculated to lead to the discovery of admissible evidence, given the limited scope of the Sierra Club's intervention in this proceeding. PSE further renews its objection to Sierra Club Data Request No. 3.03 to the extent it seeks documents that are subject to the attorney-client privilege, the work product doctrine, or any other applicable privilege. Without waiving such objection and subject thereto, PSE supplements its response to as follows:

- a. and c. Attached as Attachment A to PSE's First Supplemental Response to Sierra Club Data Request No. 03.03, please find a copy of a recent presentation given at the January 18, 2012 Colstrip Units 3 & 4 owners meeting.

Attachment A to PSE's First Supplemental Response to Sierra Club Data Request No. 03.03 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 and UG-111049



# Colstrip Owners Mtg UMAT/Regional Haze 1/18/12



# Utility Mercury & Air Toxics (UMAT)

- Key Points for Colstrip
  - Organic HAPs (dioxins/furans)
    - Work Practice Standards
      - Tune-up at each planned major outage every 36 calendar months, 48 calendar months if neural network employed
  - Acid Gases (HCl) – 0.002 lb/mmbtu
    - Colstrip U1 – 0.00005 lb/mmbtu
    - Colstrip U3 – 0.00006 lb/mmbtu
  - Mercury – 1.2 lb/Tbtu rolling 30-day avg
    - Colstrip met 100% of time in 2011
    - May need to improve spare parts inventory
  - Non-Hg metals, PM surrogate – 0.03 lb/mmbtu
    - Colstrip 1&2 3-yr avg = 0.032 lb/mmbtu (0.037 hi)
    - Colstrip 3&4 3-yr avg = 0.022 lb/mmbtu (0.031 hi)



# **Utility Mercury & Air Toxics (UMAT)**

- Key Points for Colstrip
  - Compliance Schedule
    - Clock starts March 2012
    - 3 years to comply, plus 1 yr w/State approval
      - Need to make clear & diligent effort to install controls within 3-yr timeframe
  - Emissions Averaging Allowed
    - Average all Colstrip Units together
    - CEMS required
    - Hg limit 1.0 lb/Tbtu rolling 90-day avg
  - Startup/Shutdown periods excluded
  - Malfunctions – affirmative defense allowed



# Utility Mercury & Air Toxics (UMAT)

## ■ Key Points for Colstrip

### □ Compliance Demonstration

- Mercury – CEMS
- PM – CEMS (new) or qtrly stack test
- HCl – CEMS (new) or qtrly stack test
  - Alternative SO<sub>2</sub> limit of 0.2 lb/mmbtu – CEMS
    - 1&2 – 0.40 lb/mmbtu
    - 3&4 – 0.10 lb/mmbtu
- Expect increased O&M costs related to monitor maintenance, monitor QA/QC activities, and stack testing

# Colstrip UMAT Compliance Strategy

- Burns & McDonnell Control Technology Study

REDACTED



# Colstrip UMAT Compliance Strategy

REDACTED

REDACTED

REDACTED



# Regional Haze (BART)

- Rule goal to eliminate noticeable man-made visibility impacts to National Parks by 2064
- EPA now expects to have draft Montana FIP by 3/20/12, final Montana FIP by 8/15/12
  - Should have 5 years to comply
- EPA appears to be focused on NOx controls, followed by SO2 controls
  - In other states, EPA has required NOx controls ranging from Low-NOx to SNCR to SCR
  - With scrubbers already at Colstrip, expect less emphasis from EPA on SO2 reductions

# Possible Controls at Colstrip

## ■ Units 1&2

REDACTED

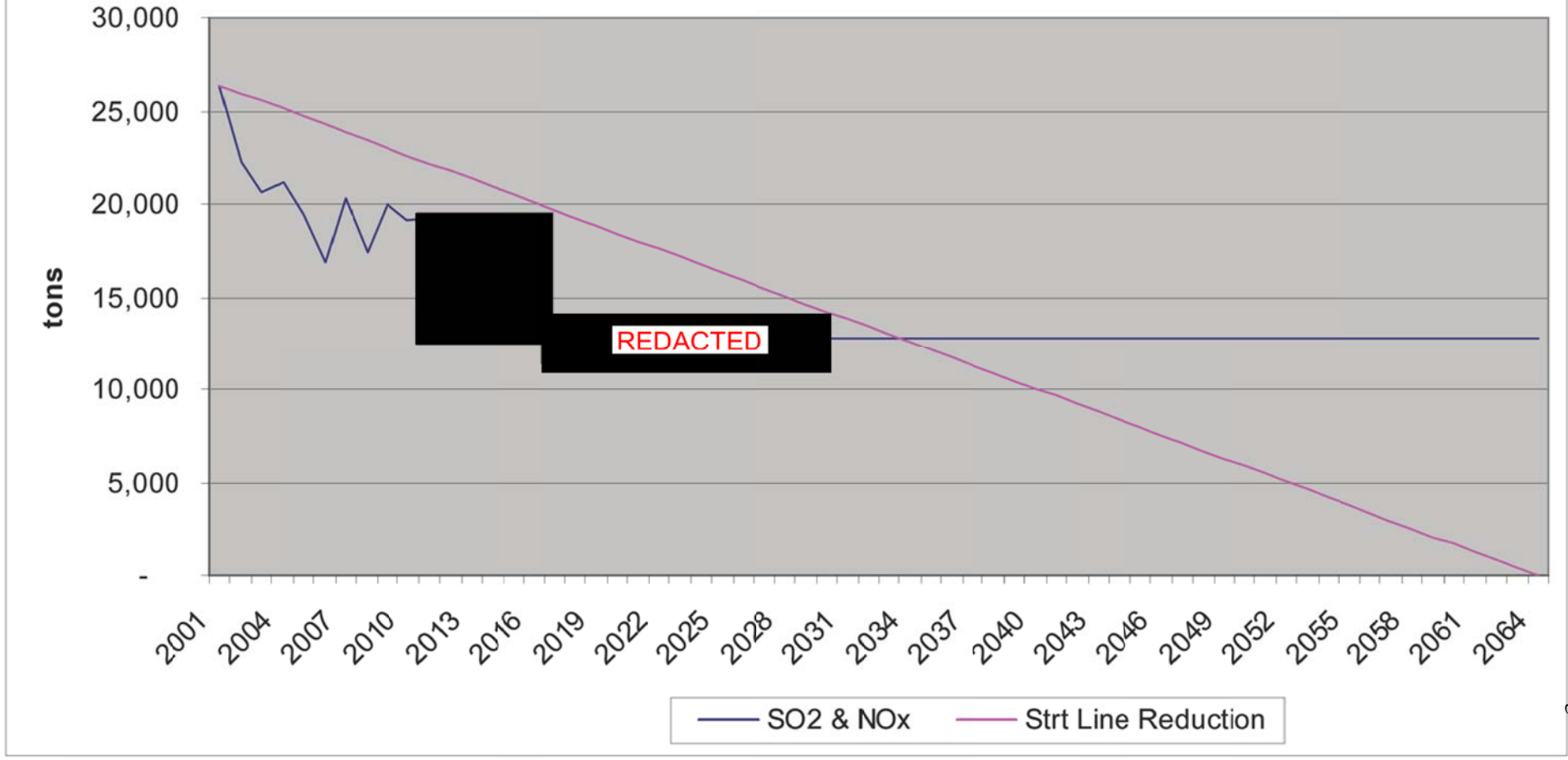
- SCR, when/if needed

## ■ Units 3&4

- Recent Low NOx (SOFA) installed in 2007/2009
- SCR, when/if needed

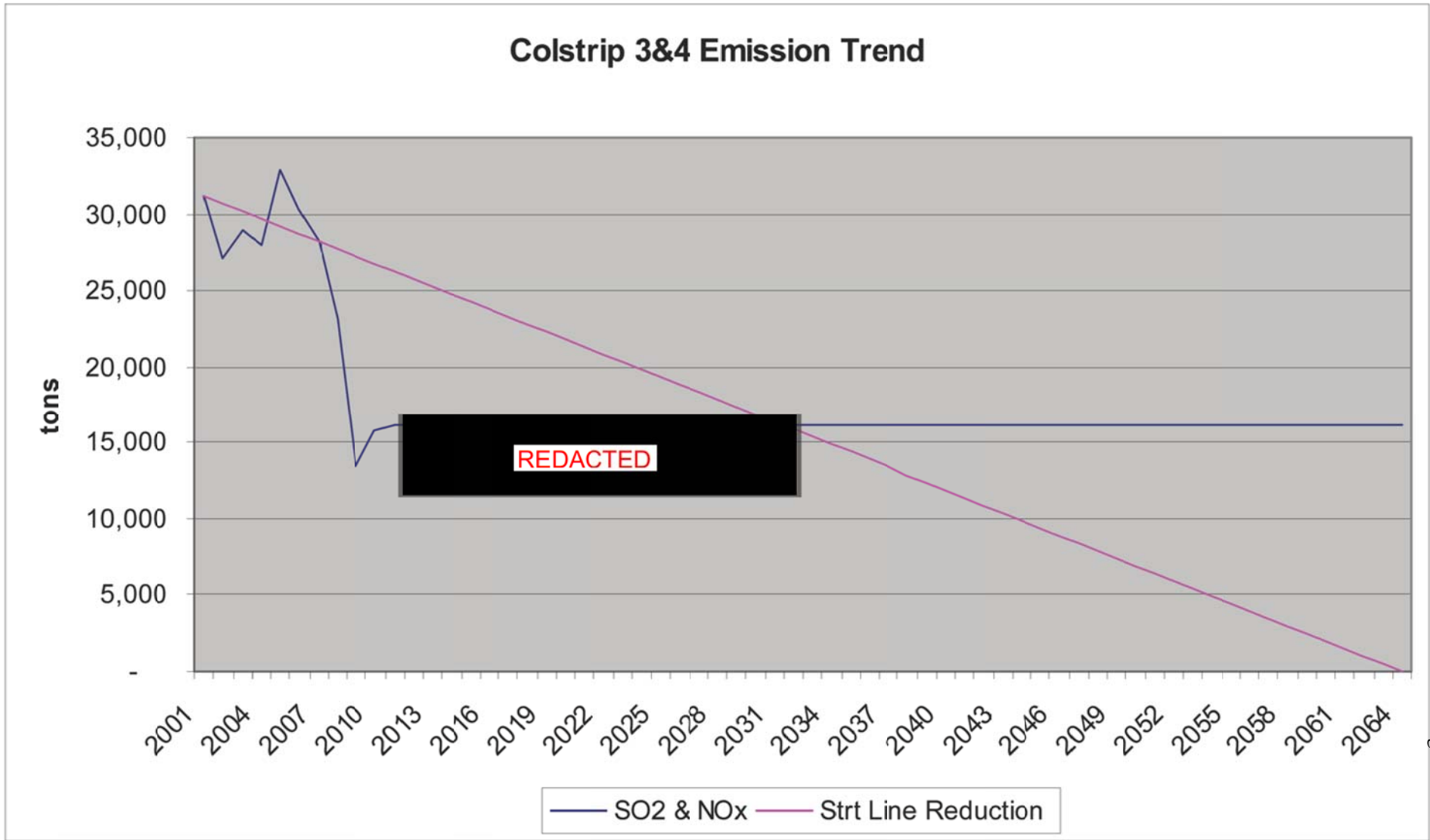


### Colstrip 1&2 Emission Trend





### Colstrip 3&4 Emission Trend



# Regional Haze Analysis Summary

Emission	Control Tech.	Current Emission Rate lb/mmmbtu	Control Emission Rate lb/mmmbtu	BART Analysis Capital Cost Est.	Cost Effective \$/ton	Visibility Improve deciview	Cost Effect \$/dv
1&2 NOx	SOFA	0.35	0.20	\$26m	551	0.39	\$7m
1&2 NOx	SCR (inc)	0.20	0.06	\$305m	7,300	0.49	\$67m
1&2 NOx	SOFA/SCR	0.35	0.06	\$331m	3,809	0.88	\$40m
1&2 SO2	Lime Add.	0.40	0.20	\$2m	209	0.38	\$4m
3&4 NOx	SCR	0.17	0.06	-	-	0.34	-

NOTE: The lowest deciview change noticeable to the human eye is generally accepted to be 1.0 deciview. Go Back to the Goal of the Regional Haze Rule – To eliminate noticeable man-made visibility impacts at National Parks by 2064.





# **Regional Haze Activities**

- Continue to work with Region 8 EPA technical staff to clarify our position based on data submittals
- Meet with National EPA and Region 8 EPA directors to explain our position
- Work with MDEQ to explain our position and encourage more involvement with EPA in FIP development
- Meet with MT governor's office and congressional staff to explain our position and encourage support
- Explore legal options to address unreasonable FIP if needed