Welcome and thank you for participating in DEQ’s COLSTRIP ANNUAL MEETING. Please read the following tips about participating in this virtual meeting:

- We are recording the meeting.
- All participants have been automatically muted. Please remain so until called on to speak.
- Use the “raise hand” feature in the app to indicate that you would like to speak.
- If you are called on to speak, please identify yourself by stating your first and last name.
- You may also use the chat box to type your questions.
- Joining by phone?
  - Press *6 to mute/unmute yourself.
  - Press *9 to raise your hand.
- Visit the following link for helpful tips about using Zoom software:
  - [https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-meeting](https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-meeting)

Thank you in advance for your patience, cooperation, and courtesy in this unprecedented time.
Agenda

• Background/AOC Overview
  • Previously Approved Reports & Financial Assurance Update
• Units 3&4 Remedy Evaluation Report/Selection of Corrective Measures
• Units 1&2 Remediation Act Plan Overview
• Units 1&2 Integrated Remedy Evaluation Report Overview
• What’s Next?
• Questions/Comments
What is coal ash?

- Coal Combustion Residual (CCR); byproduct of burned coal
- May contain traces of metals naturally present in the coal
- Regulated by Federal CCR Rule

Fly ash (magnified 2000x)

Bottom ash (magnified 6000x)
Administrative Order on Consent (AOC)

• Addresses groundwater contamination from coal ash disposal ponds

• Divides site into 3 areas:
  • Plant Site
  • Units 1&2 Evaporation Ponds
  • Units 3&4 Effluent Holding Ponds
AOC Process

Site Characterization Report (describes the current condition of each area)*

Cleanup Criteria & Risk Assessment Report (identifies constituents of interest, risk for exposure to contaminants, and cleanup criteria for contaminants)*

Remedy Evaluation Report (evaluates remediation alternatives)*

DEQ selects remedy

*indicates public comment is solicited for this report
AOC Process (continued)

DEQ selects remedy

Financial assurance for selected remedy

Remedial Design/Remedial Action Work Plan (implementing selected remedy)

Final Remedial Action Report (describes completed remedy)

Facility Closure Plan (long-term maintenance and monitoring)*

Financial assurance for closure plans
## AOC Report Status

<table>
<thead>
<tr>
<th>Report Name</th>
<th>Plant Site</th>
<th>Units 1&amp;2</th>
<th>Units 3&amp;4</th>
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<td>Background Screening Level Report</td>
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<tr>
<td>Closure Plans</td>
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- ✓ = Approved by DEQ  
- ✓ = Under review  
- -- = Not yet submitted
## Financial Assurance

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<tr>
<th>Colstrip Owners</th>
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<td>Talen</td>
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<td>Northwestern Energy</td>
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<td>Portland General Electric</td>
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<tr>
<td>Total</td>
<td>$171.4 million</td>
<td>$243.1 million</td>
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</table>
Agenda

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- Questions/Comments
Units 3&4 Remedy Evaluation Report

Selection of Corrective Measures

Coal Combustion Residual (CCR) Rule
Agenda

• Background/AOC Overview
  • Previously Approved Reports & Financial Assurance Update
• Units 3&4 Remedy Evaluation Report/Selection of Corrective Measures
• **Units 1&2 Remediation Act Plan Overview**
• Units 1&2 Integrated Remedy Evaluation Report Overview
• What’s Next?
• Questions/Comments
Coal-Fired Generating Unit Remediation Act

MCA §75-8-101 through 109
Coal-Fired Generating Unit Remediation Act

• MCA §75-8-101 through 109 (2017 Legislative Session)
• Requires Colstrip owners to submit a remediation plan within 90 days of Unit shutdown
• The purpose of this plan was to provide remediation information for items not covered under the AOC
• Due to safety and other considerations related to operation of Units 3&4, demolition and removal will be deferred until after Units 3&4 are retired
• Periodic inspections of Units 1&2 will be performed to maintain safe conditions
• Future use of land would continue to be industrial
• Remediation measures will comply with §75-8-107, requiring contractors and subcontractors to use a skilled and trained workforce and pay the standard prevailing rate of wages.
Universal Wastes

• Consists of lamps/bulbs, mercury devices, batteries and electronic wastes

• Quantities have been identified and will be disposed of in accordance with Administrative Rules of Montana regulations
Asbestos

• Asbestos-containing materials (ACMs) and presumed asbestos-containing materials (PACMs) will be removed prior to any demolition, per EPA regulations
• ACMs and PACMs will be identified by a licensed Asbestos Inspector as part of the demolition contract
• Any identified material will be removed by a certified contractor and disposed of in a certified landfill
• Talen has completed an asbestos survey; over the last 10 years of operation, ACMs have been previously identified and removed
Other Regulated Material, Including Hazardous Material

- Includes lubricating oils, hydraulic oils, non-PCB transformer oils, fuel and waste oil, fire extinguishers, refrigerants, and devices containing small amounts of nuclear materials (e.g., exit signs, smoke detectors, coal handling density gauges).

- Initial site reconnaissance identified products containing hazardous substances; these will be tracked and disposed of per applicable waste regulations.
Polychlorinated biphenyl (PCB) wastes

- Regulated under the Toxic Substances Control Act (TSCA), with US EPA having regulatory authority
- Potential materials at Colstrip that may have PCBs include fluorescent lighting ballasts and high intensity discharge fixtures, small transformers, capacitors and ballasts, oil, and building materials such as caulk, glazing and paint
- Potential PCB materials will be sampled and properly disposed of if determined to contain PCBs
Coal-Fired Generating Unit Remediation Act

Petroleum Releases
Two known petroleum release sites in the Units 1&2 area:

- MDEQ Facility ID #44-08921, Release #562: Located near current Units 1-4 Buildings and Grounds Crew building. This was a previous location of Units 1-4 mobile equipment fueling USTs. The hydrocarbon plume is stable; no migration has been observed and potential for migration is minimal. MDEQ’s Petroleum Tank Cleanup Section is working with Talen to address this release.

- MDEQ Facility ID #44-08922, Release #332: Located just north of Unit 1 in the previous location of the Units 1&2 turbine lube oil underground pipeline. Underground piping and associated soil were removed in 1990; 18 wells have been monitored since then. Migration of hydrocarbons have not been detected, however free product has been observed at 3 wells and 1 well exceeds state standards. MDEQ’s Petroleum Tank Cleanup Section is working with Talen to address this release.
Petroleum Releases, Continued

- Other small releases have been found but are within the footprint of the two identified releases; these are being addressed as part of these releases.
- The Remediation Plan addresses potential unknown petroleum releases that may be identified in the future. Talen will comply with state regulations (ARM 17.56.601 through 608) to address potential future identified releases.
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Units 1&2 Remedy Evaluation Report
Colstrip Administrative Order on Consent (AOC)
Units 1&2 Remedy Evaluation Report

• Units 1&2 Area Remedy Evaluation was split into two parts:
  – Part One addresses existing groundwater contamination from pond seepage
  – Part Two/“Integrated Report” addresses source control options for the ponds
Units 1&2 Ponds Overview

• Stage I Pond
  – Original ponds that serviced Units 1&2
  – Closed by placing an evapotranspiration (soil) cap in 2002
  – Partially clay-lined on the bottom

• Stage II Ponds
  – Operated from early 1990s until unit closure in January 2020
  – Ponds are lined with HDPE (plastic) liners

• Groundwater in this area will remain above the bottom elevation of the ponds
Hydrogeology

• Groundwater generally flows to the east/northeast
• Locally influenced by capture units

Shallow potentiometric surface
Contaminants of Concern (COCs)

- Boron
- Sulfate
- Cobalt
- Lithium
- Selenium
- Manganese
• Consists of a groundwater capture/freshwater injection system
• Includes dewatering A Cell, E Cell, and Old Clearwell
• Approved by DEQ in June 2020; $16 million of additional financial assurance secured
Talen and DEQ screened a large list of alternatives to address source control throughout Spring 2020.

The screening process narrowed the list down to four alternatives.

The integrated report provides in-depth analysis of the four alternatives, and identifies Talen’s preferred alternative.

These alternatives are in addition to the remedy components approved in the Part One report.
Alternative 6A

- Close and cap Stage II Ponds in place, with CCR Rule-compliant geomembrane caps
- Replace cap on Stage I Pond with a geomembrane cap
- Capture/injection system would operate through 2050
Alternative 7C

- Excavate and relocate all ash in Stage I Pond to a new, lined landfill on Talen property
  - Total of 2.7 million cubic yards of ash
  - New landfill would be approximately 46 acres
- Close and cap Stage II ponds in place with CCR Rule-compliant caps
- Install a gravity drain beneath the Stage II ponds to lower the water table below the bottom of the ponds
Alternative 10

- Excavate and relocate all ash in Stage I and Stage II ponds to a new, lined landfill on Talen property
  - Total of 6.7 million cubic yards of ash, plus 2 million cubic yards of dam material
  - New landfill would be approximately 91 acres
- Footprint of original Stage I/Stage II Ponds would be reclaimed
Alternative 11

- Partial removal of ash in Stage I and Stage II ponds
- All ash within 5 feet of the high water table would be excavated and relocated within the existing pond footprint
  - Stage I ash would be relocated within the Stage I pond
  - A Cell (Stage II pond) ash would be relocated to the Stage I pond
  - E Cell and Old Clearwell (Stage II pond) ash would be relocated to D Cell and other areas of the Stage II ponds
- Stage I and Stage II Ponds will be capped and closed after partial ash removal with geosynthetic caps
Total of 1.1 million cubic yards of ash would be relocated from Stage I; 3.7 million cubic yards of ash would be relocated from Stage II ponds.
Talen’s preferred alternative:
- Alternative 6A performs the best based on metrics evaluated by Talen
- DEQ has stated that it will not approve a remedy that leaves a long-term source in contact with groundwater
- Talen is proposing Alternative 11 (partial excavation) as its preferred remedy

DEQ is currently reviewing the report and evaluating the alternatives presented by Talen

A public comment period is currently in progress through Oct. 26
Public Comment Periods

• AOC requires a 30-day public comment period on reports
  – Comment period for Units 1&2 Integrated Remedy Evaluation Report ends Oct 26

• Coal-Fired Generating Unit Remediation Act requires a 45-day public comment period on the Plan
  – Comment period for Remediation Act Plan ends Nov 2

• Submit public comments to:
  DEQColstrip@mt.gov
  or
  DEQ Waste Management & Remediation Division
c/o Sara Edinberg
1225 Cedar St
Helena, MT 59601
What’s Next?

- Approval of the Units 1&2 Remedy Evaluation Report will trigger the financial assurance requirement – this will be the final piece of the financial assurance

- Remedial Design documents will be submitted for the Units 3&4 ponds and the Units 1&2 ponds
  - These provide detailed design specifications for the selected remedies
  - A 30% design has already been submitted for the 3&4 ponds

- The remedies will be implemented, and annual progress reports will be submitted to DEQ
Questions?

Contact Info:

Sara Edinberg
Project Manager
sedinberg@mt.gov
(406) 444-6797

http://deq.mt.gov/DEQAdmin/mfs/ColstripSteamElectricStation