Agenda

• Background/AOC Overview
• AOC Status Update:
  • Completed Reports
  • Reports Under Revision
• Units 3&4 Cleanup Criteria/Risk Assessment Overview
• Units 3&4 Remedy Evaluation Report Overview
• Units 1&2 Remedy Evaluation Report Update
• Financial Assurance Update
• What’s Next?
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
AOC Process (continued)

DEQ selects 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)
# 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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<tbody>
<tr>
<td>Site Characterization Report</td>
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<td>Background Screening Level Report</td>
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<td>Cleanup Criteria &amp; Risk Assessment Report</td>
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<td>Remedy Evaluation Report</td>
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<td>Remedial Design/Remedial Action Report</td>
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<td>Final Remedial Action Report</td>
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<td>Closure Plans</td>
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- ✓ = Approved by DEQ
- ✓ = Under revision by Talen
- -- = Not yet submitted
Units 3&4 Cleanup Criteria/Risk Assessment Overview

- Surface water cleanup criteria for ecological risk is being refined
- Anticipate that the next version of the report will go out for public comment

Lining F Cell, Units 3&4 Area, 2005
Constituents of Interest

- Boron
- Sulfate
- Cobalt
- Lithium
- Selenium
- Manganese
- Thallium (potential – more data needed)
- Radium (potential – more data needed)
Hydrogeology

- Groundwater generally flows outward from ponds in all directions; eventually travels east/northeast
  - Locally influenced by capture units
- Flow varies based on geology
• Talen is proposing an injection/capture well system, pond closures, monitored natural attenuation and contingent Permeable Reactive Barriers

• DEQ requested additional modeling to determine if the 3&4 area would benefit from enhancing these technologies

• 3&4 Ponds will have adequate separation from groundwater once dewatered
Arrows represent groundwater flow for Alternative 4 based on the fate and transport model (NewFields, 2017).

Cross Section Showing Conceptual Injection and Capture Systems Beneath Former Units 1 & 2 A Pond
Talen Montana
Colstrip, Montana

Geosyntec consultants

Columbia, Maryland  June 2018
• DEQ did not approve the revised report submitted by Talen in January 2019

• Talen and DEQ agreed to split the remedy into two parts:
  – Part I: Will address remedies for the existing groundwater impacts
  – Part II: Will address source control for the Stage I Pond
Potential source control options for the Stage I Pond:

- Alternative 5: Additional data collection with no further action
- Alternative 6A: Replacing existing cap with a geomembrane cap
- Alternative 6B: Replacing existing cap, plus In-Situ Stabilization
- Alternative 6C: Replacing existing cap, plus installation of groundwater drains
- Alternative 7: Excavation of Stage I Pond
Financial Assurance Status

- Three phases of financial assurance
  - Phase I (current operations)
  - Phase II (remedial costs for each of the three areas)
  - Phase III (closure costs for each of the three areas)
- Talen has submitted Phase I, Phase II for the Plant Site Area, and Phase III for all three areas
- Total of $154 million
<table>
<thead>
<tr>
<th>Report Name</th>
<th>Next Submission</th>
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<tr>
<td>Units 3&amp;4 Remedy Evaluation Report</td>
<td>August 30(^{\text{th}}), 2019</td>
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<tr>
<td>Units 3&amp;4 Cleanup Criteria &amp; Risk Assessment Report</td>
<td>August 29(^{\text{th}}), 2019</td>
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<td>Plant Site Remedial Design/Remedial Action Report</td>
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<td>October 1, 2019</td>
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<td>Units 1&amp;2 Remedy Evaluation Report, Part II</td>
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Upcoming Public Comment Periods

• AOC requires a 30-day public comment period on reports
• Meetings for specific reports are held upon request
• Upcoming public comment periods can be expected for the following reports:
  – Units 3&4 Cleanup Criteria/Risk Assessment Report
  – Plant Site Remedial Design Report (30% Design)
  – Units 3&4 Remedy Evaluation Report
Questions?

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