Z Area Salt Disposal Facility Update
Presentation to the Waste Management Committee

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We do the right thing.

Purpose

- Fulfill a 2014 Waste Management Committee Work Plan topic.
Background

- Savannah River Site’s (SRR) Z Area Saltstone Facility
  - Status of Saltstone Disposal Facility Vault 4
  - Low-level radioactive contamination at Storm Water Outfall Z-01

- Actions SRR has and is taking to address these issues
Saltstone Disposal Facility

Location of Saltstone Disposal Facility at SRS

Saltstone Disposal Facility (SDF)
- Cracks in Vault 4 roof allowed rainwater to migrate into the vault
- Liquid collected in the narrow annular space between the grout waste form and the vault wall
- Contaminated liquid could weep through construction joints or cracks that existed in the vault wall
Existing Vault 4
Contamination Controls

- Prevent Rainwater Intrusion into Vault (Roof Coatings, Sealants)
- Control Rainwater Flow Path
  - Gutters on roof and weather enclosures
  - Grading to route rainwater to retention basin
- Fix Wall Contamination
- Manage Drain Water Levels Inside Vault
  - Drain water return system
  - Manage cell water level below hut level to prevent release of contamination to environment
- Containment
  - Weather enclosures up to 8’
  - Troughs to collect leakage
  - Isolate from rainwater
  - Installed Megamix coating on walls
  - Installed Xypex coating on walls
Vault 4 Stabilization

- Last Vault 4 disposal operation in 2012
  - Current disposal operations utilize new design cylindrical SDUs

- Several alternatives were evaluated to:
  - Eliminate rainwater infiltration to Vault 4
  - Mitigate worker and environmental risks

- Alternative selected:
  - Pour minimum "clean cap" to Vault 4 cells as necessary to establish roof dose rate
    - <5 mrem/hr for worker exposure control
  - Install elastomeric roof covering on cells D, E, F, J, K, and L
    - Cells A, B, C, G, H, and I are already coated/sealed
  - Continue maintenance on roof and weather enclosures
  - Continue to manage drain water levels
SRR and DOE are committed to Vault 4 Stabilization Plan
• Project fully funded and ahead of schedule

Clean cap and elastomeric roof coating of three cells (J, K & L) scheduled in FY14
• Roof coating material determined
• Testing of low-bleed grout mixtures completed and mix selected
• Capping of Cells J, K and L complete
  - Capping of cell D in progress (ahead of plan)
• Roof coating completed on cells J and K with cell L in progress

Capping and coating of remaining cells (D, E & F) planned to complete by February 2015
Rainwater carried contamination from Vaults 1 and 4 area to the Storm Water drain line
- Drain line flows to Basin No. 4

Basin No. 4 only discharges if level reaches the height of spillway
- Feb 2013 first observed basin discharge

Spillway from Basin No. 4 flows to Storm Water Outfall Z-01
- Low-level contamination deposited

Storm Water Outfall Z-01 flows to McQueen’s Branch
- Sedimentation breaks installed to minimize contamination spread
- Sedimentation basin being expanded to 100-year storm event size
  - Excavation began on June 12, 2014
  - Expansion projected to be completed in September 2014
- Storm Water Outfall
  - Completed work to excavate spots of contaminated soil in accordance with DOE Order 458.1 and consistent with the SDF Solid Waste Permit
- Radioactive effluent monitoring at Outfall and McQueen’s Branch continues with no increases detected (sampled when liquid present)