EFCOG WMWG

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Successes and Challenges

Recent Successes

- Safe Completion of C-340 Metals Plant Demolition
  - Project named one of DOE's Top 10 Accomplishments in 2012-2013
  - Plant encompassed about 1.5 million cubic feet, the volume of a football field roughly three stories tall, heavily contaminated with Uranium, PCBs, and Asbestos
  - Workers overcame significant challenges, notably asbestos abatement, PCB removal and disposal, and cleanup of radioactively contaminated equipment and materials
- Implementation of Uranium Precipitation process to remove uranium for waste water and allow on-site discharge
  - Saved C-340 project over $231K to disposition decon and sump water
- Partnership with Portsmouth Site to conduct NNSS Independent Assessments

Successes and Challenges

Current Challenges

- Sodium Carbonate Solutions
  - Generated during process pipe preparation for off-site shipment to dissipate unreacted UF6
  - Solutions are high in radioactivity with a high concentration of sodium that causes interference with metals analysis resulting in hazardous determination for the waste stream
  - Limited and costly treatment/disposal options
  - Evaluating alternate mechanical means to avoid future generation during D&D activities
- Trichloroethylene Disposition from the C-400 Groundwater Remediation Activities
  - Preliminary data indicates trace amounts of Tc-99 that could affect free release for recycling
  - Additional analysis being conducted in efforts to avoid costly treatment and disposal as a mixed waste
  - Preparation of a DOE Authorized Limits expected if necessary to continue path to recycle
- Landfill Leachate uranium concentration increases
  - Currently within DCS Limits for the outfall
  - Apparent cause due to increased use of the landfill for disposal of Authorized Limits waste

Primary Waste Generating Projects

Project	Waste Description	Disposal Volume to Date (ft^3)*	Waste Types	Disposal Paths
Newly Generated Waste responsible for waste generated from infrastructure and site maintenance, waste operations, and USEC legacy.	Asbestos, PCB Contaminated Equipment and Capacitors, Light Bulbs, Light Ballasts, Batteries, Freon, PPE, Used Oils, Miscellaneous Debris, Waste Water	88,350	Hazardous Waste, Mixed Waste TSCA Waste, TSCA Mixed Waste Low-Level Waste, Universal Waste, Authorized Limit or Free Release Waste	NNSS EnergySolutions, M&EC, DSSI, On-Site Landfill, Clean Harbors, KPDES
PCB Program responsible for PCB trough maintenance in process buildings and PCB spill clean-up at the site.	PCB Oils, PCB Vent Duct Liquid, Spill Clean-up Debris, PPE	279	TSCA Waste TSCA Mixed Waste	DSSI, EnergySolutions, Clean Harbors
C-400 Groundwater Action responsible for groundwater cleanup associated with TCE contaminated plume.	Soil, Sediment, Piping, Filters, Waste Water, PPE	53,668	Listed Hazardous Waste, Low-Level Waste, Authorized Limit or Free Release Waste	On-Site Landfill, EnergySolutions, KPDES
C-410 Inactive Facilities Removal responsible for preparing building for demolition.	Process systems, piping, miscellaneous equipment, asbestos wiring, transite, sodium carbonate solutions	250,782	Low-Level Waste, Mixed Waste, TSCA Waste	NNSS EnergySolutions, M&EC, DSSI, On-Site Landfill,

** Disposal Volumes include only disposition since beginning of LATA KY contract.*

Project Plans for Upcoming Work

C-410 Demolition

- Estimated at over 400,000 ft^3 of building structure and various large components and process equipment to be packaged into gondolas and large cargo containers
- Primary disposition at EnergySolutions with some process components dispositioned at NNSS
- Planning to load High-Sided Gondolas at site location in lieu of using intermediate packaging historically used to obtain weights from truck scales
  - Eliminates double handling of waste thereby reducing labor costs and schedule constraints
  - Eliminates the need for excessive size reduction since gondola volume capacity allows for maximizing tonnage per conveyance
  - Requires installation of Rail Scale at the Paducah Site that will benefit future demolition and soils remediation projects

Project Plans for Upcoming Work

C-746-A/B Remediation

- Estimated at over 60,000 ft^3 of miscellaneous equipment and debris to be sorted, segregated, characterized, drained, and packaged for disposition at EnergySolutions, NNSS, and DSSI
- High Sided Gondolas planned to be used for oversized pieces of equipment/debris
- Scheduling disposition of C-410 and C-746-B allows the use of the same High-Sided Gondola fleet thus eliminating unnecessary mobilization costs at a later time

On-Site Disposal Strategy

C-746-U landfill

- The C-746-U landfill is a 60 acre RCRA subtitle D landfill permitted for 23 cells. Currently operating in cells 1 – 5.
  - Total capacity for disposal 1,560,200 Yd^3
  - Used capacity 317,489 yd^3
  - Remaining capacity 1,242,711 yd^3
- Waste type disposed includes Debris, Concrete, Scrap metal, Building materials, and soils
- During LATA KY contract we are averaging treating and discharging 782,633 gal leachate/yr
- Implemented use of Posi-shell Cover to reduce volume of dirt required on daily cover
- Use of the On-Site Landfill is the preferred disposition path for all waste meeting the WAC criteria
- Use of the On-Site Landfill saved an estimated $2.6M in FY13, and continues to help reduce costs at the Paducah Site especially for Listed Waste meeting Agreed Order Health Based Standards

Long-term Waste Disposal Strategy

Waste Disposal Alternatives Evaluation

- Continued cleanup and D&D at Paducah until 2039 is expected to generate up to 4M cubic yards
- The existing plant industrial landfill will be utilized to maximum capacity (~1M yd^3)
- The remaining 3M yd3 of waste is being evaluated in a Remedial Investigation/Feasibility Study Report (D1 issued to regulators in May 2012) that examines three scenarios:
  - Waste disposal decisions project-by-project
  - Ship waste to licensed facilities off-site
  - Build an on-site engineered waste-disposal facility
- Proposed Plan target: Spring 2014
- Record of Decision target: FY2014
- Selected alternative implementation: FY2015