Contract No:
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Mobile Melt Consolidate Facility

Discussion Topics: 3.21.23

Austin Jackson and Brian Brown
SRNL/Nuclear Materials Systems
Discussion Topics

• MMC Status/Brief Overview

• Facility Discussions
  • MMC Layout Options
  • Process Flow
  • Facility Infrastructure Requirements
  • Facility Support Equipment and Staging

• Roadmap/Timing Discussion
MMC Status/Brief Overview

• 2 modules left that require heavy fabrication.
  – Lower HEPA
  – Upper HEPA

• All modules need final electrical and control routing completed.

• Controls Subcontractor currently writing the programming and ordering control hardware.

• Final Acceptance Testing on track to be completed by primary contractor by June 1 followed by movement to SRNL for final validation testing.
MMC Facility Update

- **12 Modules/Units**
  - 6 Process
  - 5 Support
  - 1 Crane Unit
- **1 Diesel tank**
- **1 Water supply tank**
- **1 Diesel Generator**
Facility Power
Furnace Power Module
Furnace Cooling Module

[Images of the furnace cooling module in different perspectives]
Furnace Pump Module
Command Module
Lower Transfer Module
Upper Transfer Module
Upper Melt Module
Lower HEPA Module
Upper HEPA Module
Crane Hood
Process Overview - Loading in Hot Cell
Process Overview – Crucible, Pedestal, and Fuel Cell
Transfer Container Loaded
Process Overview – Process Modules
Process Overview - Transfer Container Hand-off
Furnace Loading
Furnace Loading
MMC Status/Brief Overview (Continued)

• **Facility Acceptance Test (FAT):**
  - Jenshau* - Inspection, examination, and testing of MMC Facility Components that allow for safe and reliable operations of the facility under normal operating conditions.
  - Hopewell* – Inspection, examination, and operability acceptance of the Transportation Container (TC).

• **Start Up & Testing (SUT):** Ensures facility readiness prior to conducting melting operations.

• **Validation Testing (VT):** Conduct melts to test operational capabilities, identify and correct deficiencies that require engineering fixes, and exercise the HEPA & Off Gas systems.

• **Optimization Testing (OT):** Conduct tests to perfect the melting process for oxide reduction and mixing.

*Test conducted offsite, not at SRNL Site.*
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Facility Discussions – Facility Requirements

• Site Planning
  – Points of Contact
  – Location Review
  – EEC or Similar requirements

• Furnace Cooling System
  – 6 GPM hose connection
  – Recirculation tank
  – Plan for Glycol (Antifreeze)
  – Freeze Issues
  – XX Gallons (YY Liters) of DI water

• Electrical Power
  – 480 Volts
  – 400 amp
  – 3 Phase
  – 60hz (Phase converter needed)
Facility Discussions – Support and Staging Equip.

- 50,000 lb Forklift (22,500 Kg)
- Skid steer for small parts
- 15,000 lb Forklift for Transfer Container
- Telehandler for Off-Gas
Backup
Component Detail – Transfer Container
Component Detail - Trolley
Component Detail - Furnace