K Basins Closure Project – May 2008
K Basins Closure Project – December 2012
K Basins Sludge Treatment Project

**Phase I (ECRTS)**
- Engineered Container Sludge Retrieval
- Load and Transport STSC/STS
- Interim Store – T-Plant

**Phase II**
- Load and Transport STSC/STS
- Oxidize and Package Remotely
- Transport to WIPP
- Dispose in WIPP

**KOP**
- Knock Out Pot Sludge
  - Pre-treatment (PT)
  - Processing and Packaging (KPS)
  - Load into MCO’s
  - Cold Vacuum Drying
  - Transport MCO’s To CSB
  - Store in CSB
  - Dispose with SNF

**Acronyms and Abbreviations**
- STSC: Sludge Transportation and Storage Container
- STS: Sludge Transport System
- WIPP: Waste Isolation Pilot Plant
- MCO: Multi-Canister Overpack
- CSB: Canister Storage Building
- SNF: Spent Nuclear Fuel
K West Basin Sludge Engineered Containers
K Basins Sludge Removal Process (ECRTS)
Simplified Process Flow Flow Diagram
KW Basin Modified Annex

KW Basin

KW Basin w/ Annex (future)
KW Basin Modified Annex
Modified KW Basin Annex Construction

KW Basin Annex Truck Scale Slab

Dismantlement of wall forms
ECRTS Test Facility and Mockup (400 Area Maintenance and Storage Facility, MASF)
K Basins Sludge Removal (ECRTS) Summary Plan

ECRTS Process
- Design/Safety Analysis
- Equipment Procurement
- Cold Commissioning / Operator Training (MASF)
- Process Optimization (MASF)
- Old Equipment/Debris Relocation
- Facility Mods
- Equipment Installation
- Acceptance Testing
- Readiness/Startup
- Operations
- Sludge Removal Complete

KW Basin
- Old Equipment/Debris Relocation
- Facility Mods
- Equipment Installation
- Acceptance Testing
- Readiness/Startup
- Operations
- Sludge Removal Complete

KW Annex
- Construction

T Plant
- Equipment Design/Procurement
- Deck/Cell Cleanout
- Equipment Installation
- Acceptance Testing
- Readiness/Startup
- Operations
- Sludge Removal Complete
K Basins Sludge Removal (ECRTS) Project Challenges and Efficiency Initiatives

- Challenges/Impacts:
  - FY13 funding reductions
    - Continuing Resolution – equipment procurement and T Plant mods
    - Sequester – suspended KW Annex construction
  - Annex construction issues
    - Stand down on quality related work
    - Number of design changes
  - Annex remobilization
K Basins Sludge Removal (ECRTS) Project Challenges and Efficiency Initiatives

• Efficiency Initiatives:
  – Annex Constructability Review
    • Identify lessons learned, corrective actions
    • Review structural design, minimize design changes after construction resumes
  – Process optimization at MASF
    • Baseline runs on full-scale process system
    • Confirm operability, safety interlocks
    • Operator training and procedure development
    • Cold commissioning
K Basins Sludge Removal (ECRTS) Project Challenges and Efficiency Initiatives

• Efficiency Initiatives:
  – Engineering and safety analysis
  • Sludge loading and blending in STSCs
    → reduce number of STSCs and operations time
  • Modify Engineered Container 230 in KW Basin
    → reduce equipment procurement costs and operational safety requirements
TPA Milestones – K Basins Sludge Removal

- **M-016-174**
  Complete final design of sludge retrieval and transfer system. (9/30/13)

- **M-16-175**
  Begin sludge removal from 105-KW Fuel Storage Basin. (9/30/14)

- **M-16-176**
  Complete sludge removal from 105-KW Fuel Storage Basin. (12/31/15)
Bldg 142K - Cold Vacuum Drying Facility (CVDF)

- Last MCO processed through CVDF Sep 2012.
- Nuclear Facility downgrade completed Mar 2013.
- Fuel processing systems deactivated May 2013.
- “CVDF” no longer exists.
Questions?

Roger Quintero, DOE-RL
Acting Federal Project Director
K Basins Closure Project
509-373-0421
roger.quintero@rl.doe.gov