Lujan Neutron Scattering Center Flight Path Disposition Project

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Agenda

- Scope
- Milestones, Monthly summaries
- Planning
- Challenges
  - Programmatic Deadlines
  - PHAROS D&D “PAUSE WORK” Cut Electrical conduit containing conductor
  - Low Level Waste Removal
- Successes
  - FP-9 (SPEAR) D&D
  - Repurposing of Equipment
  - FP-16 (PHAROS) D&D
  - FP-15 (PCS) D&D
  - Legacy Data Cable Removal
  - Chem Lab: Chemical Disposition
Scope

The scope of the Lujan Limited Flight Path Disposition Project (LLFPD) is presently confined to the decommissioning and demolition (D&D) of the LANSCE - Lujan Center flight paths (Figure 1) and supporting infrastructure that were previously supported by DOE Basic Energy Sciences (BES) and Biological and Environmental Research (BER) programs.

D&D focus areas associated with Lujan Flight Paths

- PHAROS (line 16)
- PCS (line 15)
- SPEAR (line 9)
- BES/BER supported infrastructure located at buildings 15 (Chem Lab)
- 622 within the Lujan Center complex
- Safe disposition of Legacy materials located in the Lujan "Boneyard" Area
SPO-SC project management subject matter expert provides routine support to project for communications and reporting to BES (Project miles stones, work packages and monthly summaries)
Challenges: Programmatic Deadlines

LANSE is a user facility with well-defined periods for beam delivery and maintenance activities, the LANSCE operations and maintenance schedule is an underpinning factor for the basis of the D&D schedule.
Challenges
PHAROS D&D Project

- Management “Pause Work”
- What happened?
  - During PHAROS D&D project discovery of electrical conduit containing wires was cut (de energized 480V) contrary to work requirements

Lessons Learned
- *Communication is key
  - Cold and dark necessary prior to any work
  - 3-factor verification of cold and dark (Facilities, P-27 ESO, Independent verification of cold and dark)
  - Mark conduit for removal (green paint) AND to remain (red tape)
  - Verification of each conduit prior to cutting by worker and “buddy”
- Have a questioning attitude – key during D&D operations
- Bring in required expertise for IWD review
  - Construction Management
  *skill of craft (heavy equipment operations, Torch cutting, facility electrical DEMO
Challenges: Low Level Waste Removal

- **CAUSE:** LLW waste items on manifest with weight discrepancies
- **CORRECTIVE ACTIONS:**
  - Recommend sending scales in for calibration
  - Review vendor recommendations to achieve <10% variation
  - Perform an effectiveness evaluation to achieve consistency
  - Contact the TSDF to obtain validation of weights
Challenges: Low Level Waste Removal

**CAUSE:** LLW waste items not captured on the shipping manifest

**CORRECTIVE ACTION:**
- Stage the blocks in a designated area as a set before loading on the Flat Bed to optimize the inventory process
- Develop a check list that contains all the pertinent information for the shipment and includes an independent verification for the number of items
- Take photographs of the loaded flat bed for inclusion into WCATS
- Evaluate effectiveness with a monthly MOV
Challenges: Low Level Waste Removal cont.

- **CAUSE:** Water accumulation inside LLW roll off waste container

- **CORRECTIVE ACTIONS:**
  - Perform a container verification for seals and cracks, and enter results in check list.
  - Add absorbent to all waste containers per Navarro instruction.
  - When loading hold the waste container at around 45 degrees, and verify no water drains out and enter results in check list.
  - Document actions in WCATS.
  - Develop a comprehensive check list that addresses this and other weight verification actions.

**TA-53-DI-0100, Rev.0 Desktop Instructions for Waste Management Coordinators (WMC) in the field**

*This document identifies scope, controls, and general procedural steps for performing specific waste management activities within the TA-53 area of operation.*
Successes:
FP-9 (SPEAR) D&D
Successes: Repurposing of Equipment
Successes:
FP-16 (PHAROS) D&D
Successes: FP-15 (PCS) D&D
Successes:
Legacy Data Cable Removal
Successes: Chem Lab: Chemical Disposition
Successes:
Safe disposition of Legacy materials located in the Lujan “Boneyard” Area
• **Chemical disposition**
  >90% complete
  4000 chemicals when started
  ~500 shipped to SNS
  ~100 waiting to ship
  Various Chem lab instrumentation repurposed at LANL sites and SNS

• Flight Path shielding blocks, vacuum vessel cut outs and Vacuum vessel equal 314,171 lbs. shipped off thus far
• Two trailers totaling in weight 38,490lbs waiting to be shipped off
• Roll-offs totaling 156,110lbs
• Additional shielding blocks in staging area totaling 125,700lbs waiting to be loaded and shipped
Repurposed the following:
- PHAROS FERMI Chopper (SNS)
- CHRISTINA spectrometer and chopper (SNS)
- PHAROS Radial Collimators (SNS)
- Qens Detectors (SNS)
- Sputtering Spectrometer (New Mexico State University)
- PHAROS: 47 detectors assemblies /392 He\textsuperscript{3} tubes ($7.2$ million replacement cost)
- SCD: detector and DAQ racks
- 7T and 11T magnet (SNS)
- Repurposed -60,000lbs of HD and borated polyethylene
- Repurposed -125,000lbs of concrete and steel shielding blocks for future spectrometer construction
What's left?

- D&D portion inside Experimental Room 1 (ER-1)
  - FP-9 shielding package
  - FP-15 shielding package
  - FP-16 shielding package
- Mercury Shutters
- X-Ray Lab DEMO
  - Hazards Beryllium, Lead, Electrical