Building 650 Demolition Project
Update

Community Advisory Council
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Agenda

- Background
- Project Scope
- Pre-Demolition Activities
- Demolition Activities
- Monitoring Program/Results
- Next Steps
Background

- Building 650 was known over the years as the Reclamation Facility and the Decontamination Facility/Hot Laundry.
- Used for cleaning of radioactive contaminated clothing and decontamination of heavy equipment in support of nuclear research operations at BNL.
- Started operations in 1959 and declared excess in 2000. Utilized for a limited amount of storage until 2014 when it was permanently shutdown.
- Environmental risks associated with Building 650 were reduced in accordance with the Records of Decision for Operable Units I and IV. Specific clean-up scope was included in AOC 6 (Building 650 Reclamation Facility Sump and Sump Outfall) and AOC 12 (Underground Storage Tanks).
Project Scope

**Project Cost:**
$5 million (DOE-EM funded)

**Project Scope:**
Characterization, removal of any remaining contaminated systems, fixing identified contamination, building demolition, waste packaging and waste disposal, and as-left radiological survey

**Benefits:**
Eliminate deferred maintenance and repair needs, reduce environmental, safety and health risks
Pre-Demolition Activities

• Preparation and approval of Project Plans (Demo, Waste Management and final status survey plans)
• Asbestos abatement
• Removal of hazardous materials (e.g., lead, PCBs, mercury, cadmium, equipment liquids, such as oils)
• Removal of equipment (e.g., compressors, tanks, air handlers)
• Selective demolition/removal of radiologically-contaminated source terms:
  • Piping
  • Ductwork/Filters
  • Equipment
  • Concrete
• Radiological surveys
• Soil sampling
• Fixative application, as necessary
Additional Pre-Demolition Photographs
Additional Pre-Demolition Photographs
Additional Pre-Demolition Photographs
Demolition Activities

• Demolition accomplished using heaving equipment, including excavators (hydraulic shear/hammer) backhoes, cranes

• Demolition sequence was prepared with the goal of minimizing the risk of personal injury, damage to equipment and property, reducing potential for spreading contamination, and minimizing waste

• Both Industrial Hygiene (IH) and Radiological personal and air monitoring performed throughout
Demolition Activities - Sequence
Demolition Activities – Areas of Known Radiological Contamination

- Exterior Fence
- Interior Fence
- Exterior Wall
- Interior Wall
- Window
- Area of known radiological contamination
Additional Demolition Photographs
Additional Demolition Photographs
Additional Demolition Photographs
Industrial Hygiene Monitoring

Contaminants of Concern: Silica, Lead, Cadmium
  • 4 Silica area samples collected at the perimeter of work zone
  • Individuals working within work zone sampled for Silica, Lead & Cadmium (daily)
    • Individuals equipped with respirators

Occupational Exposure Limits applicable to DOE Facilities

<table>
<thead>
<tr>
<th>Analyte Name</th>
<th>OSHA Action Level</th>
<th>8-hr Time Weighted Average</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OSHA PEL</td>
<td>ACGIH TLV</td>
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<tr>
<td>Silica, Respirable Crystalline [R]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Cadmium</td>
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<td>5</td>
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<tr>
<td>Lead</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

Exposure Limit Organizations
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety & Health Administration

• All Silica (Worker & Perimeter) Results were below the detectable limit
  • Highest Si result using worst case (equipment detection limit) = <.864 ug/m³

• All Cadmium Results were below the detectable limit
  • Highest result using worst case (equipment detection limit) = <.004 ug/m³

• Lead Results ranged from non-detectable to a max. value of = 0.133 ug/m³
Radiological Monitoring

Primary Radionuclides of Concern: Cs-137, Sr-90, Am-241, Pu-239/240, U-235/238

Pre-Demo Contamination Control Activities:
- Scabbling contaminated concrete
- Removing contaminated systems
- Applying fixative to contain contamination

Survey Results:
- No loss of radiological controls and no spread of contamination
- No personnel contamination events
Radiological Monitoring

**Air Monitoring Information:**
- 3 High Volume Air Samplers were positioned at the perimeter of work zone

**Air Monitoring Equipment & Placement (Radeco AVS-28)**

**Air Monitoring Results:**
- Consistent with pre-demo background measurements
Next Steps

• Demolition of the at-grade floor slab (April)
• Removal of the equipment and debris from the basement (April)
• Demo the basement walls to 2-feet below grade (April)
• Backfill the basement (April)
• Walk-over survey (May)
• Removal of asphalt/curbing (May)
• Cut-back any utilities back to manholes (e.g., steam) (May)
• Site restoration (June)
• Transportation and disposal of the waste (June)
• Closeout report (July)