<table>
<thead>
<tr>
<th><strong>Project Name:</strong></th>
<th>OR-Bldg 9206 Filter House-D&amp;D-R</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Name (Expanded)</strong></td>
<td>Oak Ridge ARRA Building 9206 Filter House D&amp;D [D&amp;D of a medium 1940s-era process facility, originally enriched uranium Nuclear Hazard Category 2]</td>
</tr>
<tr>
<td><strong>Project Type:</strong></td>
<td>Building / Facility D&amp;D Project Type</td>
</tr>
<tr>
<td><strong>Building Type:</strong></td>
<td><em>B_Typ</em> 2</td>
</tr>
<tr>
<td><strong>Project Type Detail:</strong></td>
<td>Generic Radiological Facility(ies)-Extensive Loose Contamination</td>
</tr>
<tr>
<td><strong>Supplementary Reference Documents</strong></td>
<td>9206 Final 7-9-09 (Building 9206 Filter House IGE Estimate) CORP_WBS_Description_DOE-ORO-ARRA</td>
</tr>
</tbody>
</table>

**Site Context:**
All ARRA Projects are specific EM projects developed and executed between 2008 and 2011 in response to the American Reinvestment and Recovery Act. These projects included 10 projects at the Y-12 facility at Oak Ridge at a total cost of over $220M. The projects exist within larger ongoing site operations and/or site closure projects, depend on those larger elements for site services and support, and typically include costs for those services as indirect costs.

The initial Y-12 mission included uranium separations during WWII, followed by ongoing machining and assembly of uranium weapons components. The current mission includes ongoing weapons disassembly and maintenance work. Major contaminants include uranium (various isotopes), mercury, beryllium, and organic constituents. The site consists of approximately 811 acres, spanning 2.5 miles, with more than 350 buildings that house some 6.5 million square feet of laboratory, machining, dismantlement, and research and development areas. There were numerous environmental releases but no major on-site legacy radioactive material burial grounds (the EMWMF and sanitary landfill are adjacent to the site). The ongoing weapons work requires high levels of security in some areas (Perimeter Security Zones, Protected Areas) of the facility. The prime contractor, currently Babcock and Wilcox, oversees and manages all environmental projects.

**ECAS Level 4/Parent Project Context:**
The ARRA project grouping constitutes the Parent Project grouping, since the Y-12 site is not a closure project. Y-12 EM projects that are not part of the ARRA program are not included.

The Y-12 ARRA projects are as follows:
- OR-Alpha 5 LMD-D&D-R
- OR-Beta 4 LMD-D&D-R
- OR-Biology Complex Buildings-D&D-R
- OR-Bldg 9206 Filter House-D&D-R
- OR-Bldg 9735 D&D-D&D-R
- OR-WEMA Storm Sewer-D&D-R
- OR-Y-12 Salvage Yard-WM-R
- OR-Y-12 Salvage Yard Soils-ER-R
- OR-EMWMF Expansion-WM-R
- OR-ORR Landfill Expansion-WM-R
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D&D Facility Data:
Facilities:

<table>
<thead>
<tr>
<th>Building</th>
<th>Title</th>
<th>Area (SF)</th>
<th>In-Service Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>9206</td>
<td>Production Building (partial interior equipment removal)</td>
<td>Approx. 1,000SF</td>
<td>1946</td>
</tr>
<tr>
<td>9206</td>
<td>Production Building (exterior piping and equip. removal)</td>
<td>Approx. 1,000SF</td>
<td>1946</td>
</tr>
</tbody>
</table>

Construction Details:
The 9206 Building is a medium-size single story structure, steel frame with masonry infill walls, and contains process equipment including an incinerator for high-enriched uranium materials. This project did not include overall building demolition. The Filter House was a steel plenum structure located exterior to Building 9206. The baghouse itself was 8’X8’X20’tall, there was about 200LF of duct of various sizes, 300’ of process pipe, 72 HEPA filters, and various blowers, motors, cyclones, furnaces, and other process and structural materials. Since the project represented equipment removal and not a facility as such, and the area of the whole 9206 building was not appropriate, and “equivalent area” of 2,000SF was assigned.

Facility Use:
Built in 1964, Building 9206 originally housed uranium processing and recovery systems. In the mid-1980s, Y-12 replaced the facility’s aging recovery furnace and focused on recovering enriched uranium from combustible items. In 1993, Y-12 began decommissioning the building; the following year, all uranium operations ended. The filter house is attached to the building, and consists of a number of bag filters used to remove particulate from the gaseous waste produced by the uranium recovery furnace. This project only included removal of the process equipment inside the building associated with the uranium scrap furnace and the filter house and associated piping and equipment located exterior to the building associated with incinerator off-gas treatment.

Processes causing contamination:
Recovery of highly-enriched uranium from scrap and various materials

Contaminants of concern (including extent of contamination by major contaminant):

<table>
<thead>
<tr>
<th>Building</th>
<th>Chemical Hazard</th>
<th>Location/Extent</th>
<th>Radiological Hazard</th>
<th>Location/Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B9206</td>
<td>Asbestos, Lead, PCBs</td>
<td>Process equipment and piping</td>
<td>Highly-enriched uranium,</td>
<td>Process equipment and piping</td>
</tr>
</tbody>
</table>

The principal contaminant was enriched uranium, present a powder and soot in all equipment. All waste materials must be non destructive assayed (NDA’d) to determine U235 content; materials with greater than 300g of U235 must be cleaned of accountable materials and the recovered accountable materials managed as appropriate to their status. Criticality safety reviews and NDA of materials are required prior to all handling of process materials.

D&D Project Execution
Site WBS Organization within the ECAS Project Scope:
The Building 9206 Filter House Removal project differs from other Y-12 ARRA D&D projects in that only a section of the building is to be demolished, rather than the complete structure. This project will deactivate the recovery furnace exhaust system. Although the project required management of highly-enriched uranium (e.g., security and criticality requirements/constraints) and Building 9206 is a D&D Type 3 building, this project was identified as a Type 2 ECAS.
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Project due to its limited scope.

The D&D of the building 9206 Filter House was organized with the project management, waste management, characterization, asbestos abatement, and physical dismantlement performed by B&W. The work was all performed within the protected and limited areas associated with the facility.

Methods of execution:
Management: The scope was planned, managed, and executed as a single project element.

Regulatory: The project was performed in accordance with the requirements of the Federal Facility Agreement for the Oak Ridge Reservation (ORR) and an Action Memorandum for a time-critical removal action which was prepared by DOE EM. A Waste Handling Plan including a Sampling and Analysis Plan, as well as characterization, preparation of waste profiles, sorting/segregation, and size reduction prior to transportation to an approved disposal site were included in this work scope, as needed. Waste profiles was developed and submitted to the Environmental Management Waste Management Facility (EMWMF) and Nevada Test Site (NTS) Waste Acceptance Criteria (WAC) Attainment Teams for approval prior to waste disposal. Scope also included coordination of waste shipments with the DOE contractor for the EMWMF, ORR Landfill operations, and NTS including input to the contractor’s Waste Generation Forecast. This project scope included preparation of a Removal Action Report for regulatory approval following completion of all project activities. The scope included regulatory documentation characterization, deactivation, hazard abatement/reduction, demolition, size reduction, segregation, packaging, and transport to meet applicable WAC for disposal.

Physical Approach: The scope of work for the 9206 Filter House included updating the safety basis documentation for D&D work, characterization, engineering design, asbestos abatement, and equipment removal, deactivation of any utilities, waste disposition, and D&D of the baghouse structure.

This project included removing the recovery furnace system equipment and removing the residual in-process and holdup material inside of Building 9206; and also demolition and disposal of the systems ash removal system, secondary chamber, heat exchanger, bag filter house, and associated support equipment and structures external to the building. After removal of the recovery furnace system, the recovered in-process and holdup (radiologically contaminated) material was transferred to an onsite storage facility for later disposal. Remaining waste generated from system demolition was characterized and disposed of at either NNSS or the EMWMF. Containment of airborne contamination required construction of a tent within a tent. Located in the “Rubb tent,” the large external containment structure, a second FiberFrax® containment tent surrounded the area of airborne contamination.

The activities included:
- Deactivating aboveground utilities and associated piping/conduit (e.g., steam, water, gas, air, vacuum, process contaminated piping, contaminated process non-contaminated piping, and electrical);
- Removing and disposing of asbestos containing materials (ACM) including asbestos
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- insulated pipe, duct and heat exchanger;
- Removing and disposing of the filters/filter bag house, secondary combustion chamber, heat exchangers, cyclone, fire bricks (internal components of the primary combustion chamber), and all associated process pipe, non-process piping, and structural steel. The primary chamber housing was removed.
- Preparing assess for repairing the existing mezzanine or erecting of new scaffolding to access Heat Exchangers for Non-destructive Assay (NDA) characterization, decontamination, and removal;
- NDA of holdup material in process equipment prior to disassembly and containerization;
- NDA of piping, filter bags, and equipment prior to containerization, and also of material for reclamation;
- NDA of non-process piping and/or equipment containerized for disposal prior to shipping to EMWMF;
- Size reducing duct and pipe; and,
- Preparing work permits, safety basis documentation and criticality safety reviews.

**Activities self-performed:**
- All management and key technical positions along with a portion of the technical staff
- Waste management
- Waste treatment of mixed wastes (on-site and off-site)
- Dismantlement of equipment and structure

**Activities subcontracted:**
- None

**Issues that impacted the project:**
- None

**Scope Growth:**
No identified scope growth

**Notes Regarding Use of Data**
- The area associated with the