

Deconstruction of Selected Buildings at the DNSC Depot, Curtis Bay, Maryland, Thorium Nitrate Disposition Project, Phase IV

DEFENSE NATIONAL STOCKPILE CENTER (DNSC), CURTIS BAY DEPOT

The Curtis Bay Depot is located south of Baltimore, Maryland. The DNSC has approximately sixty buildings at the Curtis Bay site in various structural conditions. Some are presently considered safe for entry. Some have previously collapsed and have been removed (other than a concrete floor slab and foundations). The DNSC previously had a stockpile of radioactive materials in several of the warehouses on the Curtis Bay site. The materials were (1) solid thorium nitrate (ThN), (2) monazite sand, and (3) rare earth, sodium sulfate. The U.S. Nuclear Regulatory Commission (NRC) has classified the stockpile as "source material," under 10 CFR 20.1003 (NRC January 1, 2001). DNSC is currently taking the steps required to relinquish its NRC license. The Oak Ridge National Lab has contracted with the Institute of Science & Education (ORISE) to perform official radiological surveys to support the closure of the NRC license.

PROJECT HIGHLIGHTS

- *Conducted an Engineering and Asbestos Survey of Each Structure*
- *Developed and Provided a Deconstruction Plan Based on the Engineering and Asbestos Surveys*
- *Developed Work and Safety Plans for all Aspects of Site Activities*
- *Developed Building Engineering Survey and Final Reports*
- *Provided a Lay-down Area*
- *Deconstructed Buildings*
- *Zero OSHA Violations and Zero Lost Work Days*

The tasks that PIKA performed were to support ORISE in their efforts in fulfilling the necessary radiological surveys of remaining facilities - twenty-four buildings that were in a partially collapsed state. PIKA conducted an engineering and asbestos survey of each structure to determine the condition of the roofs, floors and walls; the possibility of unplanned collapse of any portion of the structure; and the existence of other potential or real deconstruction hazards; developed and provided a deconstruction plan based on the engineering and asbestos surveys for the safe dismantling and removal of building components and debris required to establish safe access to the floor (or removed floor material) of each building; a work plan describing all aspects of the site activities; a project specific safety and health plan; building engineering survey reports, and the final report; provided a lay-down area for each building to stage removed material; and deconstructed buildings.

SERVICES PERFORMED

- The debris from the area outside the buildings was cleared as was necessary to allow access for radiological surveys by ORISE.
- The buildings with concrete floors were further categorized as Type 1 Buildings and were addressed differently than the ones with wooden floors (Type 3 and Type 4 Buildings).
 - Type 1 Buildings: The radiological survey area was identified. PIKA then assessed the portion of the roof and walls that needed to be removed prior to the survey. The deconstruction process began with removal of the roofing material first and then followed by any unstable exterior walls. The scattered debris on the floor was identified for the radiological survey that ORISE was scheduled to perform upon obtaining clearance from PIKA.
 - Type 3 & 4 Buildings: The radiological survey area was identified. It was determined that from an access and demolition standpoint, the buildings with wood floors posed a more serious safety hazard. The approach consisted of removing the in-place trusses in the demolition area with the appropriate equipment and then using a grapple for floor retrieval.

SPECIAL AND INNOVATIVE TECHNOLOGIES

- Temporary bracing of the structures would have been cost prohibitive, so the floors had to be removed in manageable pieces to a safe distance away from the building.

