



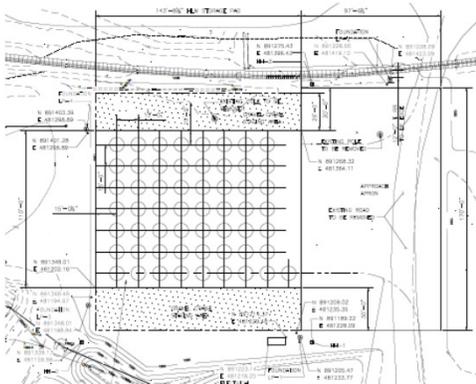
HLW Canister Storage Pad



Project Overview

Storage Pad Features

- Three-foot-thick structurally engineered reinforced concrete
 - Pad dimensions: 144' X 110'
 - 133 tons of reinforcing steel; ~1,800 cubic yards of concrete
- Engineered crane and approach apron
 - Concrete approach: 98' X 170'
 - 110 tons of reinforcing steel; ~900 cubic yards of concrete
 - 2-Crane pads: 26' X 144' each



Engineered for Safe Construction and Operation

- HLW Storage System designed by NAC International, an international supplier of nuclear fuel storage systems
- Subsurface soil characterization performed by Glynn Geotechnical Engineering
- Hydrologic and hydraulic testing conducted by GeoEnvironmental, Inc. to support pad area design and construction
- Storage pad design by Enercon Services, Inc.
- Pad construction, utility installation and final site restoration by Butler Construction Co. of WNY.



The West Valley HLW Storage Pad is an exterior reinforced concrete structure designed to bear the weight of more than 50 concrete storage casks containing vitrified (glass) radioactive high-level waste. The storage area is located on the WVDP site and will appear similar to the one pictured above.

The West Valley Demonstration Project's (WVDP) high-level waste (HLW) canisters will have a new on-site storage location. The previously-produced canisters are on schedule to be moved to an engineered outdoor concrete pad in 2015-2018, as part of the ongoing effort to prepare their present storage location, the Main Plant Process Building (MPPB), for demolition. Final disposal of the canisters is planned for a yet-to-be established federal high-level waste repository.

The storage pad features an at-grade design capable of supporting the weight of 57 loaded storage casks containing 278 glass-filled waste canisters. Its location was one of several considered; it was chosen in part due to its on-site accessibility, proximity to site's rail spur, and distance from future planned cleanup activities.

Each loaded storage cask will be transported about 0.5 mile to the pad using a towed rubber-tired gantry style crane traveling on an on-site roadway. The casks will enter the pad on an adjoining approach apron and will be placed into storage by the cask transporter.

The casks are part of a passive storage system whose design is consistent with systems in use for spent nuclear fuel dry storage at nuclear power reactor sites across the U.S.



HLW Canister Storage Pad

Design and Construction



Pad Excavation

Site Analysis

Prior to final design, geotechnical testing was conducted to analyze the existing sub-surface structure and identify any impediments to safe transport of the loaded casks from the MPPB to the storage pad. That testing determined site excavation depth and engineered backfill requirements for pad construction for providing a stable pad surface capable of withstanding the weight of 57 loaded storage casks (87.4 tons per cask, each containing 5 HLW canisters).

The haul path – existing roadways on the WVDP site that extend from the MPPB to the pad location – were also evaluated to determine locations requiring reinforcement, such as existing underground utilities and drainage culverts to allow conveyance of the loaded casks.



Concrete Placement

Pad Design and Construction Planning

The pad and related structures are designed to support canister storage casks for a minimum of 50 years. Pad features include several feet of compacted permeable backfill beneath a three-foot-thick reinforced concrete pad. An adjoining concrete approach apron supports cask off-loading and placement on the pad. Adjacent crane pads are installed to support possible future shipping operations. The pad and associated electrical components were electrically grounded during installation.

Temporary storm water barriers were in place during construction to minimize environmental impacts resulting from area runoff while the area was an active work zone. Permanent drainage features located north and west of the pad and finished grading are designed to accommodate the rainwater discharge from a 100-year storm event.

Construction

The storage pad and approach apron were constructed in 2013 and included the placement of approximately 2,700 cubic yards of locally-produced concrete.



Completed Pad and Apron

The West Valley Demonstration Project (WVDP) is a U.S. Department of Energy-led environmental remediation project located approximately 35 miles south of Buffalo, NY. CH2M HILL Babcock & Wilcox, LLC, (CHBWV) was formed to meet the specific requirements of Phase 1 decommissioning of the WVDP. The limited-liability partnership combines the experience and capabilities of CH2M HILL Constructors Inc. (CH2M HILL), Babcock & Wilcox Technical Services Group, Inc. (B&W), and Environmental Chemical Corporation (ECC).