



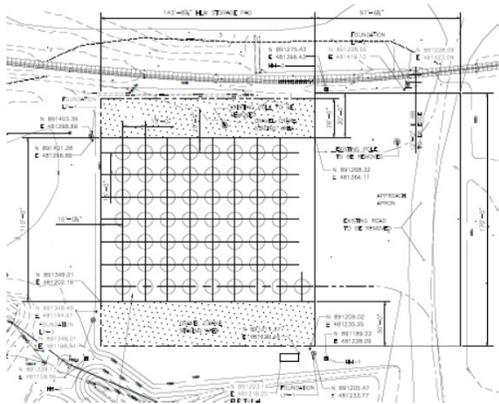
HLW Canister Storage Pad



Project Overview

Storage Pad Features

- Three-foot-thick structurally engineered reinforced concrete
- Pad dimensions: 144' X 110'
- Engineered crane and approach pads
 - Concrete approach: 98' X 170'
 - 2-Crane pads: 26' X 144' each



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.

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.
- Construction of the pad, utilities installation and final site restoration was awarded to Butler Construction Co. of WNY on July 29, 2013.

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 2016-2018, 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 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. Adjoining pad structures include an approach ramp for removing the casks from the transporter and placing them on the pad.

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.



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Design and Construction



Geotechnical sampling

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 evaluated to determine locations requiring reinforcement, such as existing underground utilities and drainage culverts to allow conveyance of the loaded casks.



Future pad location

Pad Design and Construction Planning

The pad and related structures were 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 will support cask off-loading and placement on the pad and crane pads will support possible future shipping operations. A grounding system will be installed for grounding the pad and associated electrical components.

Temporary storm water barriers will be placed during construction to minimize environmental impacts resulting from area runoff while the area is 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.

Pad Construction

Pad construction is scheduled to begin in the summer of 2013 and be completed in November 2013, and includes placement of approximately 2,800 cubic yards of locally-produced concrete.

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, (CHBWL) 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).