

**1300-N EMERGENCY DUMP BASIN/
1304-N EMERGENCY DUMP TANK**

DEFERRAL OF FOUNDATIONS AND UNDERLYING SOILS

November 6, 2003

BACKGROUND

Remediation efforts at the 100-N Area are separated into two distinct categories. "Decontamination and decommissioning" (D&D) of buildings, vaults, and structures, with subsequent cleanup verification of underlying soils, is conducted as a CERCLA non-time-critical removal action in accordance with an approved Action Memorandum (Ecology 1999). "Final remediation" and cleanup verification of soil sites is conducted as a CERCLA remedial action in accordance with an approved Record of Decision for the 100-NR-1 and 100-NR-2 operable units (EPA et al. 1999).

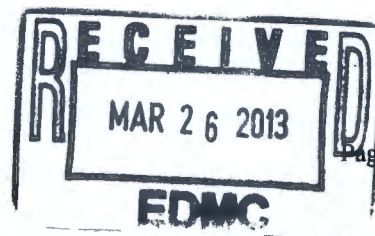
Planning is proceeding for D&D of the 1300-N Emergency Dump Basin (EDB) and the 1304-N Emergency Dump Tank (EDT). The 1300-N EDB is a large, open, steel-lined basin designed to contain radioactive primary coolant from N Reactor in case of a reactor emergency. Although the EDB was never used for this purpose, it was used as a holding basin for radioactively contaminated water periodically generated during reactor steam generator "blow down." Only non-appreciable radioactive contamination remains in and around the basin structure. The EDB is identified as waste site 116-N-4 in the Waste Information Data System (WIDS) database.

The 1304-N EDT is a 500,000-gal insulated tank, designed to contain the entire volume of primary reactor coolant. The EDT was maintained half-full of water so it could act as a quenching system for steam released during a reactor emergency. The tank was decontaminated in 1995, which significantly decreased the radiological dose of the tank; however, appreciable radiological contamination still remains within the tank. The EDT is identified in the WIDS database as site 100-N-57.

DISCUSSION

As described in the 100-N Area ancillary facilities Removal Action Work Plan (RAWP) (DOE-RL 2003), the scope of the removal action is constrained to the remediation "of waste sites *within the footprint* of the ancillary facilities, or provide for deferral for inclusion in later remedial action (with approval from the lead regulatory agency)." Deferral to the Remedial Action (RA) portion of the remediation may be allowed when the following occurs:

- large volumes of contaminated soil are encountered
- other soil contamination sites are adversely affected by D&D activities
- removal of contaminated soil inhibits D&D activities.



When other contaminated underground structures (including pipelines, pipe tunnels and pipe trenches) may be exposed or affected, the RAWP requires an evaluation on a case-by-case basis to determine whether these should be deferred to a later remediation activity (DOE-RL 2003).

Deferral of work scope must be approved by the lead regulatory agency. An evaluation must be performed to determine how much, if any, of the site will be backfilled. The site may be stabilized in a manner that will not hinder future remediation (DOE-RL 2003).

There is sufficient information in the WIDS to conclude that large volumes of soil contamination exist adjacent to and underlying these two facilities. Excavation into the footprint underlying the 1304-N and 1300-N Facilities would extend into multiple WIDS sites surrounding these structures. These WIDS sites would require re-excavation as part of future remediation and closure activities within the 100-NR-1 operable unit. Excavation would also affect various runs of piping that exist between the 1304-N/1300-N structures and the 105-N/109-N facilities.

A stormwater trench resides in close proximity to the 1304-N EDT. The stormwater trench was installed to accept stormwater from multiple locations and convey the water to a nearby french drain. Measures to control the safety of the excavation (e.g., sloping and shoring) would impact the trench. Overcoming this impact would require additional significant planning and engineering controls, which would inhibit D&D activities.

The 1300-N EDB resides within 20 ft of the 105-N and 109-N buildings, with buried piping between the walls of the basin and the 105-N/109-N buildings. Removal of the north and east walls of 1300-N would impact these structures, potentially causing unstable conditions.

RECOMMENDATIONS

It is recommended that near-term decommissioning of the 1304-N EDT only include removal of the steel tank and concrete foundation, leaving the underlying soils within the footprint for remediation during future remedial action activities. This will facilitate the sampling and closure of all the adjacent soil sites together. This will also reduce the potential impact on the stormwater trench and on adjacent structures and waste sites.

It is further recommended that near-term decommissioning of the 1300-N EDB include excavation only to a depth necessary to remove the west and south walls and the basin steel structure. The north and east walls (closest to the 105/109-N facilities) will be left in place to prevent an unstable condition of other structures, including 105-N/109-N and adjacent piping. These remaining walls will be removed during future D&D of these structures. Sites deferred to a future remediation effort will be placed in a safe and stable condition prior to turnover.

Upon completion of these activities, the WIDS database will be updated to include the waste characterization data used for disposal of the structures and the global positioning system data documenting the depth of the excavation prior to any backfilling (as needed for safety purposes). Final remediation and cleanup verification for these sites will be performed with neighboring sites under the RA program.



These recommendations will not inhibit future remedial activities and provide the most effective overall approach for complete remediation of the 1304-N and 1300-N facilities.

REFERENCES

DOE-RL, 2003, *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, 1999, *100-N Area Ancillary Facilities Action Memorandum*, CCN 064866, letter to L. Piper, RL, dated January 6, 1999, Washington State Department of Ecology, Kennewick, Washington. ~~0050149~~ 0050149

EPA, Ecology, and DOE, 1999, *Interim Remedial Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units of the Hanford 100-N Area, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy, Richland Operations Office, Richland, Washington. 0052847

APPROVALS

Approval by the lead regulatory agency (Washington State Department of Ecology) also reflects approval by the U.S. Environmental Protection Agency.



D. C. Smith, Project Manager, Environmental Restoration Division
U.S. Department of Energy, Richland Operations Office

1/6/04

Date



F. W. Bond, Project Manager, Restoration Projects
Washington State Department of Ecology

1/15/04

Date