

FINDING OF NO SIGNIFICANT IMPACT

Melton Valley Storage Tanks Capacity Increase Project

Oak Ridge National Laboratory, Oak Ridge, Tennessee

AGENCY: U.S. DEPARTMENT OF ENERGY

ACTION: FINDING OF NO SIGNIFICANT IMPACT

SUMMARY: The U.S. Department of Energy (DOE) has completed an environmental assessment (DOE/EA-1044) of the proposed Melton Valley Storage Tanks Capacity Increase Project (MVST CI) at the Oak Ridge National Laboratory in Oak Ridge, Tennessee. The proposed action would involve the construction and maintenance of six partially below-grade concrete vaults, each of which would contain one 100,000-gallon, stainless-steel tank for storage of liquid low-level radioactive waste (LLW). Based on the results of the analysis reported in the EA, DOE has determined that the proposed action is not a major Federal action that would significantly affect the quality of the human environment within the context of the National Environmental Policy Act of 1969 (NEPA). Therefore, preparation of an environmental impact statement (EIS) is not necessary, and DOE is issuing this Finding of No Significant Impact (FONSI). Additionally, pursuant to Executive Order 11988, *Floodplain Management*, and 10 CFR 1022, *Compliance with Floodplain/Wetlands Environmental Review Requirements*, DOE reports in this EA that (1) there are no practical alternatives to locating a potable water pipeline in the floodplain of Melton Branch; and (2) to minimize impacts, pipeline construction would be limited to placement of footers in the floodplain of Melton Branch.

PUBLIC AVAILABILITY OF EA AND FONSI: The EA and FONSI may be reviewed at the following address and copies of the documents may be obtained from:

U.S Department of Energy
Public Reading Room
55 Jefferson Circle
Oak Ridge, Tennessee 37830.

FURTHER INFORMATION ON THE NEPA PROCESS: For further information on the NEPA process, contact:

Carol M. Borgstrom, Director
Office of NEPA Policy and Oversight (EH-42)
U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585 Phone: (202) 586-4600 or (800)472-2756.

BACKGROUND: The Oak Ridge National Laboratory (ORNL) is a multipurpose research facility in eastern Tennessee about 7 miles southwest of the City of Oak Ridge. LLLW is generated during research at several ORNL facilities and from ongoing environmental remediation activities. Currently, LLLW is collected and transferred by pipeline to an evaporator. The concentrate remaining after evaporation is pumped to eight MVSTs for storage. Action is necessary for DOE to comply with a 1992 Federal Facilities Agreement among DOE, the Environmental Protection Agency, and the State of Tennessee, Department of Environment and Conservation. The agreement requires that existing MVSTs be upgraded or replaced to meet new secondary containment standards and leak detection requirements. By implementation of the proposed action, DOE would replace existing MVSTs.

DESCRIPTION OF THE PROPOSED ACTION: The proposed action is the construction and maintenance of six partially below-grade concrete vaults, each of which would contain one 100,000-gallon stainless-steel tank for storage of LLLW. The action would be undertaken adjacent to existing MVSTs at ORNL. In addition to the new tanks, the proposed facility would include (1) a stainless-steel-lined vault adjacent to the concrete tank vault to contain process pumps and valves; (2) a ventilation system to maintain the tanks and vaults under negative pressure; (3) a buried and lined valve pit to connect the new piping to existing MVSTs and the LLLW evaporator; (4) a truck unloading facility consisting of a diked and covered concrete pad and pipe connections to receive chemicals or pump process wastes to trucks; and (5) a control, instrument, and equipment room for the new facility. A one-mile extension of a potable water line would be constructed from the High Flux Isotope Reactor area to the new MVSTs. When construction is complete, LLLW from the existing MVSTs would be transferred to the new tanks via existing LLLW transfer pipelines.

ALTERNATIVES: DOE considered the following alternatives to the proposed action: no action, cease generation of LLLW, storage at other ORNL facilities, source pretreatment/treatment, and storage at other DOE sites. With the exception of no action, which by law must be considered in an EA, these alternatives were dismissed from further evaluation for economic, institutional, or programmatic reasons.

ENVIRONMENTAL IMPACTS:

Air Quality

Excavation and earthmoving activities during construction would produce particulate emissions (fugitive dust), which would temporarily degrade local, onsite air quality. Common dust suppression measures would be used to minimize impacts. Modeling results indicate that, under worst-case meteorological conditions, the National Ambient Air Quality Standard for respirable particulate matter (PM-10 or particulates less than 10 microns in diameter) would not be exceeded, and offsite receptors would not be affected.

Transfer of LLLW from the existing MVSTs to the new tanks and maintenance of the new tanks would generate no non-radioactive atmospheric emissions. The proposed facility would be equipped with high-efficiency particulate air (HEPA) filters that would remove particulate radionuclides. Based on emissions from existing MVSTs, modeling results indicate that the effective body dose to the maximally exposed individual from radionuclide emissions would be less than 0.1 millirem per year. Background radiation in the region is about 360 millirem per year.

Surface Water Resources

Construction of the partially below-grade concrete vault would require excavation and grading at the proposed site. About 1.5 acres of land would be disturbed. Earthmoving has the potential to increase erosion at the site, and during periods of precipitation, sediment runoff to an ephemeral stream east of the site. Sedimentation would likely occur in the ephemeral stream and would not be expected to adversely impact the quality or biota of larger streams in the watershed (Melton Branch and White Oak Creek). Silt fences, hay bales, and other erosion and sedimentation control methods would be used to minimize impacts.

Clearing of about 2 acres of mixed hardwood-pine forest and excavation to a 3-foot depth along an existing road bed for installation of a potable water line extension has the potential to increase erosion and sedimentation to Melton Branch. Also, placement of footers for an elevated portion of the water line in the floodplain of Melton Branch would disturb less than 180 ft³ of soil. With the use of erosion and sedimentation control methods, adverse impacts to the quality and biota of the stream are not expected. The proposed pipeline route was considered as the preferred alternative because it would cross the Melton Branch floodplain at a previously disturbed area (roadbed). Any other crossing of Melton Branch along the route would impact an undisturbed area of floodplain.

Transfer of LLLW from existing tanks and storage in the new facility would not be expected to adversely impact surface water resources. During transfer of LLLW from existing MVSTs to the new tanks, level indicators and remote alarms would be monitored continuously to ensure the integrity of the system. In the proposed facility, LLLW would be stored in single-walled tanks surrounded by secondary containment. With this design and with sloped floors, retention dikes, and lined and monitored sumps that would be part of the proposed MVSTs, the potential for LLLW to migrate offsite would be very low. As a precaution, areas adjacent to the new MVSTs would be routinely monitored for LLLW contaminants.

Groundwater

Groundwater would not be adversely impacted by excavation and grading because the normal water table is 10 feet below the design grade of the proposed tank vault and water line extension. During wet seasons when the water table is elevated, groundwater seepage into

work areas could be a problem. Hence, slopes would be graded to allow gravity drainage to an ephemeral stream east of the site.

Accidental spills of fuel or other liquids used during construction could adversely impact groundwater quality. Rapid spill emergency response in accordance with the ORNL Spill Prevention, Control, and Countermeasures Contingency Plan would minimize impacts.

Terrestrial Ecology

The proposed site for the new tanks is devoid of ecological resources because it was previously disturbed. Therefore, no impacts to terrestrial species and habitat, would result from the proposed action. There are no wetlands present at the proposed MVSTs site and along the path of the potable water line extension. The U.S. Fish and Wildlife Service has advised DOE that no federally listed or proposed threatened or endangered species would be affected by the proposed action.

Loss of about 2 acres of mixed pine-hardwood would result from water line construction. This loss is about 0.04% of pine-hardwood forest on the Oak Ridge Reservation. Species that use this habitat would be displaced to nearby similar habitat, with no adverse impacts to populations expected. Following construction, disturbed areas would be planted with native vegetation to stabilize soil surfaces.

Socioeconomics

The proposed project would be constructed by a local contractor to DOE and would not require specialized labor. LLLW transfer and tank maintenance operations would be conducted by ORNL personnel. Thus, no impacts to the local economy or public services would result from the proposed action. With regard to Executive Order 12898, Environmental Justice, the minor impacts identified in this EA would not disproportionately affect any minority or economically disadvantaged population in the Oak Ridge vicinity.

Archaeological and Historic Resources

The Tennessee State Historic Preservation Officer has advised DOE that the proposed project areas contain no cultural resources eligible for listing in the National Register of Historic Places.

Health and Safety

Construction workers would be subject to standard industrial hazards associated with operation of earthmoving vehicles and equipment and with the hazards of excavation. ORNL health physics and industrial hygiene personnel would monitor activities during construction to ensure adherence to safety procedures and to identify potential hazards.

Transfer of LLLW to the new tanks would take place in an underground pipeline system. Thus, occupational exposure would be unlikely. During maintenance of the tanks, grab samples would be taken biennially for chemical and radionuclide analysis. Workers would use a shielded glovebox for sampling and would not directly contact the LLLW.

Although no pH adjustment of MVST contents has been required in the past, tanker trucks containing acid and caustic chemicals would be available for this purpose. An accident involving one of these trucks could result in the release of a large quantity of acidic or caustic material that could be immediately dangerous to life and health, if inhaled. The probability of such an occurrence, however, is low.

The LLLW concentrate to be stored at the new facility would contain fissionable materials. A Safety Assessment has determined that a nuclear criticality event is not credible for the proposed action.

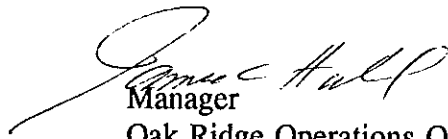
Cumulative Impacts

Incremental impacts of the proposed action in combination with 10 planned or ongoing actions in Melton Valley were evaluated. With the exception of the proposed Remote-handled Transuranic Waste Storage Facility immediately adjacent to the MVST site, other activities would be undertaken more than 3 miles to the east.

Individual projects were found to have the potential to result in minor impacts to air quality, water resources, and ecological resources over localized areas ranging from one to 13 acres in size. A total of 33 acres of land would be disturbed for all projects, including the proposed MVST CI project. Site clearing, grading, and excavation for various projects would not be concurrent. Because of this, degradation of air quality and erosion and sedimentation effects on water quality and aquatic biota would be localized and sporadic, and incremental contributions from each project would not result in adverse cumulative impacts. Clearing of 33 acres of mostly forested habitat would cumulatively impact the percentage of vegetation and terrestrial habitat on the Oak Ridge Reservation. The proposed action and other planned projects would remove about 1% of forested area in Melton Valley from its current use. Cumulative impacts would include the loss of native vegetation and reduced wildlife populations from habitat destruction and forest fragmentation.

DETERMINATION: Based on the findings of this EA, DOE has determined that the proposed Melton Valley Storage Tanks Capacity Increase Project would not constitute a major Federal action that would significantly affect the quality of the human environment within the context of the National Environmental Policy Act. Therefore, preparation of an environmental impact statement is not required.

Issued at Oak Ridge, Tennessee, this 25 day of May , 1995.


Manager
Oak Ridge Operations Office