INFORMATION SHEET: MATERIAL DISPOSAL AREA H

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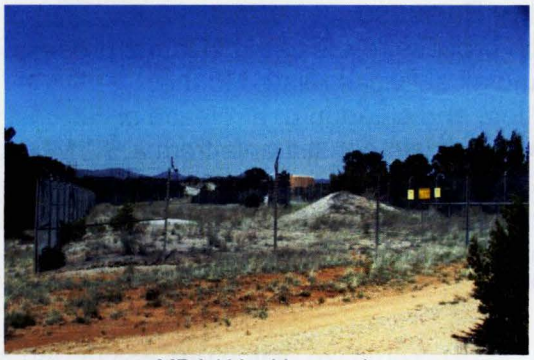

MDA H looking north

1940s LANL was founded in 1943 as part of the Manhattan Project. Processes used to carry out LANL's past and present missions involve the use of hazardous and radioactive materials.

1950s During and after World War II, materials were disposed of on the LANL site or otherwise released into the environment.

1960s Congress enacted basic legislation to protect the environment. The Department of Energy's predecessor, the Atomic Energy Commission, and LANL began to conduct surveys and to clean up areas where spills and disposal had occurred.

1970s Congress enacted the Resource Conservation and Recovery Act (RCRA) that governs the day-to-day operations of hazardous waste generation, treatment, storage, and disposal facilities (sites).

1980s Congress amended RCRA by passing the Hazardous and Solid Waste Amendments (HSWA). HSWA prescribes a corrective action process that focuses primarily on the investigation and cleanup, if required, of inactive sites.

1989 Environmental restoration began at LANL to clean up sites that were formerly involved in weapons research and production.

1990s Present The Remediation Services project investigates and cleans up sites that have the potential to affect human health or the environment.

LOS ALAMOS NATIONAL LABORATORY

Los Alamos National Laboratory (LANL) is a multidisciplinary research facility administered by the Department of Energy (DOE)/ National Nuclear Security Administration (NNSA) and managed by the University of California. LANL is located in north-central New Mexico approximately 35 miles northwest of Santa Fe. LANL covers 40 square miles of the Pajarito Plateau; the Plateau consists of a series of finger-like mesas that are separated by deep canyons containing perennial and intermittent streams running from west to east.

RISK REDUCTION AND ENVIRONMENTAL STEWARDSHIP REMEDIATION SERVICES PROJECT

LANL's Remediation Services (RS) project (implemented by the Risk Reduction and Environmental Stewardship [RRES] Division) is a part of a DOE nationwide program. DOE's environmental restoration efforts began in 1989. The project investigates whether hazardous chemicals and/or radioactive wastes are present as a result of past LANL operations and remediates these sites as needed.

MATERIAL DISPOSAL AREAS AT LANL

The 26 material disposal areas (MDAs) at LANL generally include sites where waste material has been disposed of on or below ground surface in excavated pits, trenches, or shafts.

MATERIAL DISPOSAL AREA H DESCRIPTION

MDA H [Solid Waste Management Unit (SWMU) 54-004] is the first of 10 mesa-top MDAs to undergo a corrective measures study to identify and evaluate different alternatives for future management of the site. MDA H is located north of Pajarito Road at Technical Area 54. MDA H is approximately one-third of an acre in size and contains nine inactive disposal shafts. Each shaft is cylindrical with a diameter of 6 feet and a depth of 60 feet. The shafts are filled with classified solid-form waste to a depth of 6 feet below the ground surface. The wastes in shafts 1 through 8 are covered by a 3-foot layer of concrete placed over a 3-foot layer of crushed tuff. The waste in shaft 9 is covered by 6 feet of concrete. To protect against the possible impacts of mesa-edge instability, all MDA H disposal shafts were located at least 90 feet from the rim of Pajarito Canyon (the nearest canyon). The waste is at least 900 feet above the regional aquifer. Much of the classified waste was nonhazardous; however, radionuclide-contaminated materials, and materials contaminated by high explosives were also disposed of at MDA H.

On a mass basis, the largest component in the MDA H inventory is metal, both radioactive and nonradioactive (24% depleted uranium (DU) and 33% other metals). Potentially reactive materials such as lithium represent 1% of the inventory. Graphite represents 9%, radioactive materials other than DU account for approximately 24% of the inventory. Plastics account for 9% and paper and HE each constitute less than 1% of the inventory.

Information Sheet: Material Disposal Area H

What is a corrective action?
Corrective action may refer to a specific action to remediate a SWMU or SWMUs at an individual facility or it may refer to the cleanup process or program under RCRA.

Why is corrective action required?
Through the corrective action process, the Environmental Protection Agency requires RCRA-regulated facilities to investigate and manage releases of hazardous waste or constituents to the environment. Corrective action is included as a requirement in LANL's facility permit through statutory authorities. Facilities may also voluntarily choose corrective action.

What is the process?
RCRA Facility Investigation (RFI)
Determines if a release has occurred, identifies the nature and extent of contamination from the release and the environmental pathways along which contaminants could reach human and environmental receptors, evaluates the risk to those receptors.

Corrective Measures Study (CMS)
Identifies and evaluates and different corrective action alternatives and recommends specific remedies to manage risks from a site, based on data generated during the RFI and information pertaining to potential corrective measures technologies.

Corrective Measures Implementation (CMI)
Includes detailed design, construction, operation, maintenance, and monitoring of the selected remedy.

What is a site conceptual model?
A site conceptual model is a 3-dimensional picture of site conditions that conveys what is known about the sources, releases and release mechanisms, contaminant fate and transport, exposure pathways and potential receptors, and risks. The site conceptual model of MDA H integrates RFI data and scientific understanding to describe how contaminants may affect risk to receptors in the future. The model describes the features, events, and processes that may contribute to a release of hazardous wastes or radionuclides buried at MDA H. It also evaluates the potential exposure to humans and the environment resulting from such a release and the probability and consequences of such an exposure.

RCRA Corrective Action Process
The RCRA corrective action process refers to the cleanup process or program under RCRA and all activities related to the investigation, characterization, and cleanup of a release of hazardous waste or hazardous waste constituents from a SWMU at a permitted or interim status facility to any environmental medium. The degree of investigation and subsequent corrective action necessary to protect human health and the environment varies significantly across facilities.

The implementation of the RCRA corrective action process began at MDA H in 1990 with the preparation of the RCRA facility investigation (RFI) work plan. Implementation of the RFI work plan at MDA H began in 1994 and characterization of the site was completed in 2001. NMED approved the RFI report in 2003. RFI results show a release of tritium (in the form of water vapor) and low concentrations of vapor-phase volatile organic compounds (VOCs) from the subsurface shafts. The NMED recommended a corrective measures study at MDA H because MDA H may present a future risk to humans and the environment even though current conditions at MDA H pose no unacceptable present-day risks. Corrective action alternatives to address potential future risks of MDA H were evaluated in a Corrective Measures Study report submitted to NMED in 2003. LANL addressed NMED comments and issued Revision 1 of the Corrective Measures Study report in June 2005.

Alternatives for MDA H
Alternatives evaluated for MDA H included: 1) upgrading the existing cover, 2) construction of a new evapotransporative (ET) cover with maintenance and monitoring, 3) construction of an ET cover and stabilization of the area around the disposal shafts, and 4) excavation and onsite or offsite disposal of the waste. NMED will review the report, select a remedy, and solicit public comments.

Opportunities for Involvement
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