Long-Term Surveillance and Maintenance Program
UMTRCA Title II Disposal Sites

U.S. Department of Energy
Grand Junction Office

F A C T S H E E T

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Overview

Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) (Public Law 95–604) addresses reclamation of uranium mill tailings at commercial facilities that were in operation when the law was passed. The act requires the host State or the Federal Government to monitor and maintain all closed Title II disposal sites. When a host State declines to become the long-term steward for a disposal cell, these responsibilities are assigned to the U.S. Department of Energy (DOE) Long-Term Surveillance and Maintenance (LTSM) Program at the DOE Grand Junction, Colorado, Office.

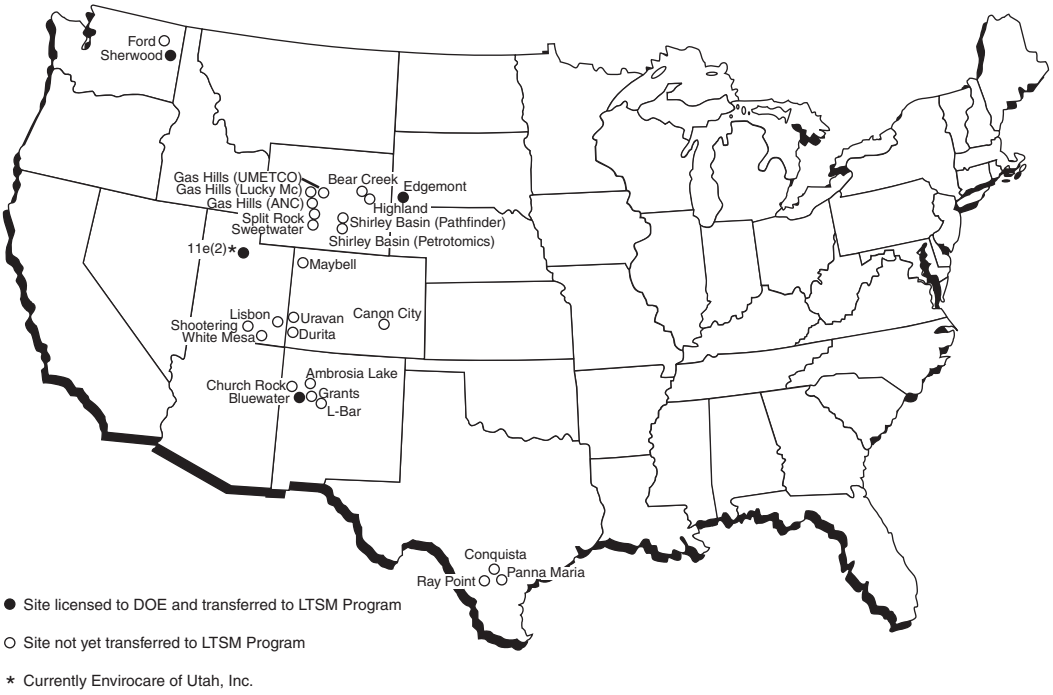
Uranium ore processing operations at Title II sites were conducted under a specific license issued to the site owner by the U.S. Nuclear Regulatory Commission (NRC) or an Agreement State. (An Agreement State has been authorized by NRC to administer its own radiation control program.) For license termination, the owner is required to conduct reclamation activities that bring the site into compliance with applicable NRC and U.S. Environmental Protection Agency (EPA) standards. When the conditions for site closure are met, NRC terminates the specific license and the site comes under the NRC general license for long-term care. Either the host state or DOE becomes the licensee for the site under the general license. The licensee accepts responsibility for long-term stewardship of the site. As yet, no host state has elected to become the long-term custodian of a closed Title II site.

The commercial owner of the processing facility pays the cost of Title II site reclamation and closure. Some owners are eligible for reimbursement of reclamation costs for the portion of uranium milling conducted under contract to the U.S. Atomic Energy Commission (the predecessor agency to DOE). The site owner is also responsible for funding any subsequent inspections and ongoing maintenance activities at the closed disposal facility.

DOE anticipates that 20 Title II sites will be under the general license by 2006 as ongoing site reclamations are completed; the LTSM Program will potentially become long-term steward for all these sites. Ultimately, approximately 28 Title II sites will be managed by the LTSM Program.

Reclamation Process

Contaminated materials typically will be stabilized in place at each Title II processing site. For each site, the owner prepares a site closure plan, which is approved by NRC or the Agreement State. The closure plan describes how the licensee will reclaim the site to comply with



Locations of UMTRCA Title II Disposal Sites

applicable standards. The owner also prepares other required documentation, which may include an environmental assessment or an environmental impact statement.

Except for disposal cells on tribal lands, title to the land and the by-product materials in the disposal cell will be transferred to the host state or to the Federal Government when the site comes under the general license. DOE will administer sites for the Federal Government. On tribal lands, the tribal government will retain title to the land. The owner must obtain permanent access to the disposal site for the long-term custodian to conduct necessary stewardship activities.

Disposal Cell Design

Disposal site location and cell design should achieve maximum protection from erosion and other geologic or environmental processes and provide the required protection of human health and safety and the environment. Typically, mill tailings and other contaminated materials will be stabilized in place and covered to isolate the cell contents from the environment. The tailings impoundment locations at operating facilities are often suitable for eventual in-place disposal.

The design of each disposal cell will be unique to accommodate local environmental conditions. Each disposal cell system must minimize the potential for water infiltration and the resulting creation of leachate, minimize the potential for erosion, and reduce radon emissions to within regulatory limits.

Disposal cell covers typically incorporate a low-permeability soil layer that reduces water infiltration and functions as a radon barrier; a layer of free-draining bedding material to promote rapid runoff of precipitation; and a layer of erosion-protection material consisting of either a planted soil and rock matrix or large-diameter rock. Additional cover components may include frost-protection layers, capillary breaks, and bentonite mats. The top and side slopes of the disposal cells are sloped to encourage drainage while preventing erosion.

Areas surrounding the disposal cell will be engineered to protect the cell from erosion and other potential threats to cell integrity. Run-on water is intercepted and diverted, where necessary. Disturbed areas will be revegetated, and erosion-protection material will be installed in outlying areas to prevent head-cutting erosion into the cell area. Access controls are installed, which may include warning signs or fences with locked gates.

Disposal Site Licensing

The long-term steward, either the Agreement State or DOE, prepares a site-specific long-term surveillance plan (LTSP). An LTSP specifies stewardship activities for a particular site, describes site conditions, and specifies contingency actions to be followed if the site requires nonroutine or emergency maintenance or repair. LTSP contents are specified in Title 10, *Code of Federal Regulations* (CFR), Part 40.28.

NRC terminates the specific license when the Commission concurs in the site-specific LTSP and concurs that the reclaimed site conforms to all regulations, including groundwater standards. These regulations are specified in 40 CFR 192, Subparts D and E, and at 10 CFR 40, Appendix A. The site then comes under the general license issued by NRC in accordance with 10 CFR 40.28.

The disposal cells are designed to "...be effective for up to one thousand years, to the extent reasonably achievable, and, in any case, for at least 200 years..." The NRC license does not expire. Accordingly, the responsibility of DOE or the host state to care for the site lasts in perpetuity.

LTSM Program Activities

The LTSM Program is responsible for ongoing regulatory compliance at Title II sites. Program specialists inspect each Title II site and report site conditions to the NRC annually. Inspection parameters are specified in the LTSPs.

Site inspections identify conditions that might affect site integrity. These changes are evaluated and the program conducts needed maintenance or monitoring. Maintenance activities have included repairs to fences and site access controls; adjustments to drainage and construction of drainage structures to correct erosion problems; and vegetation control, including periodic mowing.

Environmental monitoring may be specified in the LTSP as part of the stewardship services provided by the LTSM Program.

Contacts

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http://www.gjo.doe.gov/programs/ltsm