

15. What Are The Licensing Requirements for a Low-Level Radioactive Waste Disposal Facility?

A low-level radioactive waste disposal facility must be licensed by the federal Nuclear Regulatory Commission (NRC) before it can operate. The NRC will issue a license only after it is satisfied, following extensive evaluation, that the disposal facility and its operator meet all the safety requirements specified in federal and state regulations.

This Fact Sheet summarizes the performance objectives that the disposal facility must meet, outlines the licensing process, and describes some of the information included in a license application. It should be noted that this information is presented in detail in the Code of Federal Regulations, Title 10, Part 61 (10CFR 61), "Licensing Requirements for Land Disposal of Radioactive Waste".

► Performance Objectives

Four Performance Objectives have been established by the NRC in 10CFR 61.41-44 for the design, operation, and closure of a low-level radioactive waste disposal site. They are:

- protection of the general population from releases of radioactive material (annual dose to any member of the public cannot exceed 25 mrem);
- protection of inadvertent intruders (individuals who might unintentionally come in contact with the waste after the facility has been closed for many years and access to the site is no longer controlled);
- protection of individuals during operations; and
- long-term stability of the site.

► Licensing

The operator of a disposal facility must submit a license application to the NRC showing how it will meet each of the Performance Objec-

tives. The application must contain specific information on how the Performance Objectives will be met. It will include a detailed description of design criteria, construction plans, operating plans, closure plans, technical analyses, and financial assurances, among other items.

If the NRC concludes that all objectives will be met and all other required information is provided, then a license to operate a site will be issued. A procedure for evaluating license applications is published in NUREG-1200, Standard Review Plan for the Review of a License Application for a Low-Level Radioactive Waste Facility. The procedure is based on 10 CFR 61.23.

License applications are public documents and can be reviewed by any citizen. Comments are encouraged specifically during the public comment period.

► Design Criteria

Design criteria are measures against which the NRC reviews and evaluates an application for a license to operate a low-level radioactive waste facility. For example, if the design criteria included a statement that the disposal facility's cover must not collapse under the weight of a 5,000 pound vehicle, the agency would review the construction plans to ensure that the cover will be strong enough to support 5,000 pounds.

Also included is a description of the natural events such as tornadoes or earthquakes that the facility is designed to withstand. The disposal facility must be designed to meet the Performance Objectives even if such a rare natural event does occur.

► Construction Plans

Details of the methods of construction for the

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various parts of the disposal facility must be presented in the application. Some of the parts specifically mentioned in the regulations include individual disposal units, intrusion barriers, on-site traffic, and drainage systems.

► **Operating Plans**

The license application must include a description of the operating plans. Some of the plans to be discussed include:

- type, amount, form, and classification of the radioactive material proposed to be received and disposed of at the facility;
- methods for handling the waste;
- waste emplacement and segregation;
- training program for all site personnel;
- environmental monitoring program;
- quality control program;
- radiation safety program for control and monitoring of radiation and radioactive material; and
- physical security program (details of which will not be public information).

► **Closure plan**

The closure plan provided with the license application must include descriptions of:

- design features intended to facilitate closure;
- design features intended to eliminate the need for active maintenance after closure; and
- known natural resources at the site. (The concern is that after access to the site is no longer controlled, someone extracting those natural resources might unknowingly dig into the low-level radioactive waste.)

These are prepared during characterization of the site and preparation of the license application, to ensure that eventual closure will be permanent and safe.

► **Technical Analyses**

Several technical analyses must be provided to demonstrate that the proposed facility will meet the performance objectives. These analyses will show why each design, construction, operation, and closure feature was selected. They provide in effect a clear road map to the license reviewers and the general public showing how decisions were made for the facility. The technical analyses must cover four topical areas:

- analyses of the pathways in demonstrating protection of the general public for releases of radioactive material;
- analyses of the protection of individuals from inadvertent intrusion;
- analyses of the protection of individuals during operations; and
- analyses of the long-term stability of the disposal site.

► **Financial assurance**

In a license application, the applicant must show that it either possesses the necessary funds or has reasonable assurance of obtaining the funds to build, operate, close, maintain, and monitor the disposal facility.

► **For More Information**

If you want to read more about licensing a low-level radioactive waste disposal facility, some of the references listed below may be helpful.

- Code of Federal Regulations, Title 10, Part 61, 1992.
- NUREG-1200, "Standard Review Plan for the Review of a License Application for a Low-Level Radioactive Waste Facility", U.S. Nuclear Regulatory Commission, January 1987.

- NUREG-1300, "Environmental Standard Review Plan for the Review of a License Application for a Low-Level Radioactive Waste Facility", U.S. Nuclear Regulatory Commission, April 1987.
- (The NUREG references are available from the U.S. Department of Commerce, National Technical Information Service, Springfield, VA 22161.)

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