

not and Disposal

Artist's Rendering of Pennsylvania's Low-Level Waste Disposal Facility



Source: Chem-Nuclear Systems, Inc.

Benefits for the Host Community

Pennsylvania's law and regulations provide compensation for the host and affected municipalities, host county, and local residents.

Funds will be provided to police, fire, and ambulance services near the facility to handle possible emergencies, in addition to the emergency response services that are part of the facility operation.

Support for county emergency management planning, training, and central dispatch facilities also will be provided.

Funds also will be provided for:

- Payment of school and property taxes for residents living within two miles of the facility.
- Purchase of properties within two miles of the facility at presite values, on request.
- Direct payments to the host municipality in proportion to the amount and radioactivity of wastes accepted at the facility, with a guaranteed minimum payment.

The host municipality also will be able to negotiate additional benefits. These additional benefits could include preference for local hiring and purchasing, compensating services or payments, or other benefits to address specific needs of the local citizens.

REDUCING THE VOLUME, STABILIZING THE FORM

Both state and federal laws require generators to reduce the volume and toxicity of low-level wastes. Each low-level waste generator will be required to meet waste reduction goals to obtain a DER permit for disposal facility access. All low-level waste that is disposed must be in a solid, stable form and compressed tightly to eliminate empty space inside the package. DER will conduct inspections at generator facilities to verify that waste reduction, form, and packaging requirements are met before low-level waste is shipped for disposal.

The level of risk associated with low-level waste depends on the concentration, toxicity, and half-lives of the radionuclides it contains. These variables are the basis for the low-level waste classification system established in Pennsylvania regulations. This classification system specifies the types and concentrations of radionuclides that can be disposed as low-level waste.

Low-level radioactive waste is classified as Class A, B, or C. Most low-level waste is Class A, the least dangerous. It must be isolated from the environment for 100 years. Class B waste has more radioactivity and needs to be disposed of in packages that will maintain their size and shape for at least 300 years. Class C waste contains higher concentrations of radioactivity than Class B waste and takes the longest to decay to safe levels, approximately 500 years. Class C waste must be specially packaged and stabilized, and disposed separately from the other waste classes disposed at the Pennsylvania facility.

Between 1987 and 1992, an annual average of 169,952 cubic feet of low-level waste, containing 111,804 curies of radioactivity, was generated in the Appalachian Compact. Class A waste accounted for 96% of the volume and 19% of the radioactivity. Class B represented about 3% of the volume and 6% of the radioactivity. Class C waste represented less than 1% of the total volume; however, Class C waste comprised nearly 75% of the radioactivity of low-level waste generated in the Appalachian Compact during this period.

During facility operation, DER, the host municipality, and the host county will have on-site inspectors responsible for inspecting waste packages received at the facility and inspecting the operations of the facility. The inspectors will have authority to refuse waste and shut down the facility if there is a threat to health and safety.

LONG-TERM CARE FOR THE HAZARDOUS LIFE OF THE WASTE

After 30 years of operation, the facility will be closed, according to a plan approved by DER. Chem-Nuclear, as the licensee, will decontaminate and dismantle the buildings, close and stabilize the disposal units, and continue to monitor the area. The licensee will remain on-site for at least five years after the facility is closed to ensure its stability. After this postclosure period, state law requires that control of the facility be turned over to a state custodial agency.

The state custodial agency will care for the site until the low-level waste decays to safe levels, which can be 500 years for a small portion of the waste. There will be a program of monitoring and maintenance as required to ensure safe containment of the radioactive waste. DER will continue to regulate activities at the disposal site.

To prove that long-term care is no longer needed, the custodial agency must demonstrate to DER that the waste has decayed to levels that allow unrestricted use of the site. To do so, the agency must show that unrestricted use of the site would not result in a radiation dose that is greater than the natural background radiation in the soil prior to site development.

Fast Fact

Between 1987 and 1992, an annual average of 144,099 cubic feet of low-level waste was generated in Pennsylvania. This compares to 27,000,000 cubic feet of municipal solid waste generated on an annual basis in Pennsylvania during this same period.

