

acceptable ground-level concentrations established by the Ohio Environmental Protection Agency. During routine operation of the Glass Melter, the effective dose equivalent of radiation to the maximally exposed individual at the Mound Plant boundary [approximately 470 meters (510 yd) north-northeast from the Glass Melter stack] would be 0.07 mrem/year (tritium, plutonium-238, and thorium-230) from inhalation and ingestion pathways. These emissions would not cause the Mound Plant to exceed the individual effective dose equivalent limit of 10 mrem/year in the Environmental Protection Agency's National Emission Standards for Hazardous Air Pollutants. Based on the 1990 population distribution surrounding the Mound Plant, the collective effective dose equivalent to the total population residing within 80 km (50 mi) of the facility would be 2.6 person-rem/year. The environmental assessment shows that the health risk from such exposures would be very small.

Onsite personnel would not be exposed to unique hazards and would be adequately protected from potential exposure to radionuclides or other hazards by the existing health and safety programs. Existing facility design features would reduce direct worker contact with radioactive materials.

The formation of dioxins from Glass Melter operation would be virtually precluded due to specific technological design features of the equipment. For instance, the elevated operating temperatures of the Glass Melter would result in a high destruction and removal efficiency (99.9999% in test burns). In addition, the rapid cooling of the offgases below dioxin-forming temperatures, as recommended by the Environmental Protection Agency for municipal waste incinerators, would also be used to preclude dioxin formation.

The worst reasonably foreseeable accident involving the Glass Melter would be a fire on the loading dock that would result in the complete vaporization of the contents of ten mixed waste storage drums. The estimated frequency of such an accident is once every 100,000 years. The effective dose equivalent to the maximally exposed individual [approximately 200 m (220 yd) downwind] would be 0.2 mrem, well below Environmental Protection Agency standards. The environmental assessment shows that the health risk from such exposures would be very small. Predicted concentrations of nonradiological pollutants would meet the Ohio Environmental Protection

Agency's maximum acceptable ground-level concentrations. Taking into account the low probability of such an event, and the small magnitude of the consequences, the health risk posed by the accident would be very small.

No endangered species, critical habitats, floodplains, wetlands, or historical or archaeological resources would be affected by the proposed action.

*Alternatives Considered:* In the environmental assessment, DOE considered two onsite alternatives to the proposed action and seven offsite alternatives in the context of the original proposed action (i.e., assuming the continuing operation of the Mound Plant). The discussion below, however, while being based on the environmental assessment, reflects the current proposed use of the Glass Melter (based on DOE's decision to close the Mound Plant), which is to treat only mixed waste backlog.

- *No Action:* The present practice of waste storage and disposal would continue and the Glass Melter would not be used. Most of the mixed waste backlog is liquid, and much of it is combustible. Storage of the untreated waste, therefore, could adversely impact human health and the environment, especially in the case of a fire in the storage facility.

- *Administrative Action:* Another alternative would be to rely upon the established Mound Waste Minimization and Pollution Prevention Program to identify, screen, and analyze options to reduce the generation of waste. Waste that is in storage would not be affected by this program. The need for treatment options would persist.

- *Offsite Treatment and Disposal:* These alternatives would involve the transportation of mixed wastes to designated sites. DOE considered seven options for offsite treatment. All of the offsite treatment alternatives, with the exception of the Nevada Test Site, would involve thermal treatment.

—*Quadrex HPS, Inc. (Gainesville, FL):*

This commercial facility cannot accept certain of the Mound mixed wastes, so this alternative would not, by itself, address the need to treat such wastes.

—*Diversified Scientific Services, Inc. (Kingston, TN):*

This commercial facility could accept most of the mixed waste from Mound. Treatment, however, may be restricted by air permit conditions limiting the type of waste used for fuel and by Environmental Protection Agency regulations for boilers and industrial furnaces (40 CFR 266.100-112 and Appendices I-IX).

—*Idaho National Engineering Laboratory (INEL):* INEL has a permitted incinerator facility, the Waste Experimental Reduction Facility (WERF), capable of burning radioactive material and hazardous waste. WERF is currently shut down, and its operation is contingent upon completion of National Environmental Policy Act review and DOE approval of a Safety Analysis Report. The current waste acceptance criteria for WERF limit the radioactive and chloride content of wastes and prohibit receipt of any free liquids. These criteria would prohibit the acceptance at WERF of almost all of the Mound waste proposed for treatment in the Glass Melter. The criteria could not be changed without substantial upgrades to WERF.

—*Los Alamos National Laboratory:* The proposed Controlled Air Incinerator is currently being permitted and undergoing National Environmental Policy Act review for operation at production capacity. Current operational plans do not include acceptance of offsite wastes, and the draft RCRA permit proposes to prohibit treatment of offsite waste.

—*Savannah River Site:* DOE is currently constructing the Consolidated Incinerator Facility under a construction permit from the State of South Carolina. This facility will not allow out-of-state waste to be treated. DOE is preparing an environmental impact statement on waste management at the Savannah River Site, which will include further analysis of operation of the Consolidated Incinerator Facility and other volume reduction alternatives. Trial burns and operation of the facility are being deferred until the completion of the environmental impact statement process.

—*Oak Ridge Gaseous Diffusion Plant:* The incinerator at the Oak Ridge Gaseous Diffusion Plant currently treats mixed waste. The primary sources of waste treated at this incinerator are the Paducah Gaseous Diffusion Plant, the Portsmouth Gaseous Diffusion Plant, and the Oak Ridge Reservation. A substantial backlog of waste exists that will take several years to treat. Thus, this alternative would not be available to Mound for several years and would not meet Mound's immediate needs.

—*Nevada Test Site:* Disposal of mixed waste at the Nevada Test site is considered a possible alternative to treatment in the Glass Melter. Land disposal restrictions under the Resource Conservation and Recovery Act would require, however, that any