Building to the annex, staged on a concrete loading dock adjacent to the annex, and then moved individually to a fume hood in the annex where the contents would be transferred into a feed system for processing in the melter. The waste would be added to molten soda-lime silica glass in the burn chamber of the Glass Melter. Ash from the combustion process would fall to the glass surface, where it would be incorporated into the melt. When the molten glass would reach a prescribed chemical mix (or a prescribed level of radioactivity), it would be discharged from the melter into 19 liter (five gallon) containers. The containers would then be transferred to a storage area in the building using mechanical aids (e.g., hoists and a roller conveyor system) to cool and to await transport by truck to existing onsite storage facilities.

The Glass Melter would have an estimated annual capacity of approximately 48,000 kg (106,000 lb) of wastes, based on an average throughput of 23 kg/hour (51 lb/hr) and a 2,080-hour work year. As originally proposed by the DOE, and as analyzed in the environmental assessment, operating at this capacity would have enabled DOE to eliminate the existing backlog of approximately 43,000 kg (95,000 lb) of mixed waste in approximately six years, while processing hazardous and mixed wastes [approximately 39,000 kg (86,000 lb) annually of nonradioactive solvents and mixed wastes] as generated.

Since the environmental assessment was written, DOE has decided to close the Mound Plant. DOE proposes, therefore, to use the Glass Melter only for the mixed waste backlog. DOE has not yet fully characterized this waste for radioactive contamination levels. The radiation level of the waste feed would be limited by the need to comply with the Environmental Protection Agency's National Emissions Standards for Hazardous Air Pollutants and by internal Mound limitations. If, after characterization, the radiation level of the waste is determined to be low enough that the capacity of the Glass Melter would be the factor controlling the processing rate, then the schedule for treatment of the backlog waste could be as short as one year.

The environmental impacts of the proposed treatment of only the mixed waste backlog are adequately covered, and are bounded by, the analysis in the environmental assessment, because calculations of radiological exposures and impacts were based on assumptions of waste radioactivity content that would exceed the actual content under the current proposed action (according to the environmental assessment, the mixed waste backlog is estimated to have a total activity of 211 curies of tritium and 0.42 curies of plutonium-238; the calculations for Glass Melter operations, however, are based on a total waste activity content of 240 curies/yr of tritium and 0.48 curies/yr of plutonium-238). The discussion below, which is based on the environmental assessment, therefore, would apply equally to the new proposed action. If the DOE later proposes to use the Glass Melter to treat other than mixed waste backlog, it will undertake appropriate further review under the National Environmental Policy Act.

Routine operation of the Glass Melter would generate treated offgas, scrubber sludge, scrubber liquid effluent, and several solid waste streams. The sludge generated by the scrubbing operations [approximately 770 kg (170 lb) per year] would be transferred by pipeline: (1) back to a Glass Melter feed port for reprocessing, (2) to an existing cementation process for immobilization in concrete, or (3) to container storage for any subsequent additional treatment required under the Resource Conservation and Recovery Act (RCRA) land disposal restrictions. Filtered liquid scrubber effluent [approximately 36,000 kg (79,000 lb) per year], depending on its composition, would be: (1) pumped to an existing wastewater treatment facility, (2) pumped to the cementation process for immobilization as concrete (if the waste processed involved significant tritium concentrations), or (3) packaged for any subsequent additional treatment required under RCRA land disposal restrictions. Most liquid effluent would be treated at Mound's existing radioactive wastewater treatment facility and released via an existing outfall permitted under the National Pollutant Discharge Elimination System (NPDES).

The Glass Melter would generate, per year, approximately 3,200 kg (7,000 lb) of glass block (mixed waste); 8,900 kg (20,000 lb) of cementized scrubber effluent and sludge (also mixed waste); and 1,900 kg (4,200 lb) of maintenance wastes (filters, replacement parts, etc.). The maintenance wastes would generally be considered mixed waste, although certain of the replacement parts may have only surface radioactive contamination or may not be hazardous waste. The mixed wastes would be stored onsite until a mixed waste disposal facility is available.

The immediate result of Glass Melter treatment would be the conversion of waste that is primarily liquid and combustible, to a stable, inorganic form that would present very little environmental concern in storage. Most of the waste would eventually require transport to a radioactive mixed waste land disposal facility. Any waste that is not mixed waste would be disposed of with other, similar Mound wastes (e.g., hazardous waste is shipped offsite for disposal).

Environmental Impacts: In a series of test burns conducted in January 1985, the Glass Melter demonstrated the capability to thermally treat hazardous wastes in compliance with regulatory requirements. In June 1987, the Glass Melter was further tested and demonstrated effective treatment of low-level radioactive waste while meeting applicable regulatory requirements. Proposed future treatment of wastes using the Glass Melter would also meet all applicable environmental requirements. The Glass Melter is considered a ''thermal treatment unit,'' not an ''incinerator,'' under the Environmental Protection Agency regulations (40 CFR 260.10). Under the regulations for miscellaneous treatment, storage, and disposal units (40 CFR Part 264, Subpart X), any permit for the glass melter may include appropriate conditions from the incinerator regulations (Subpart O). Thermal treatment is one of the limited options DOE currently has to meet the requirement for site treatment plans under the Federal Facility Compliance Act.

The Environmental Protection Agency issued a Draft Strategy for Combustion of Hazardous Waste in Incinerators and Boilers on May 18, 1993, initiating a reexamination of its existing regulations and policies on waste combustion. In the draft strategy, the Environmental Protection Agency indicates that, ''if conducted in compliance with regulatory standards and guidance, combustion can be a safe and effective means of disposing [of] hazardous wastes.'' To the extent that the Glass Melter would destroy hazardous wastes it would effectively ''dispose'' of that portion of the mixed waste backlog. Nevertheless, the thermal treatment of mixed wastes would necessitate the disposal of treatment residues as a mixed waste. These residues would be stored, pending final disposal in an approved location.

Emissions of nonradiological pollutants to the air during routine operation of the Glass Melter would include arsenic, cadmium, chromium, lead, carbon monoxide, hydrogen chloride, nitrogen oxides, and particulates. Predicted concentrations of nonradiological pollutants would meet applicable National Ambient Air Quality Standards and the maximum