

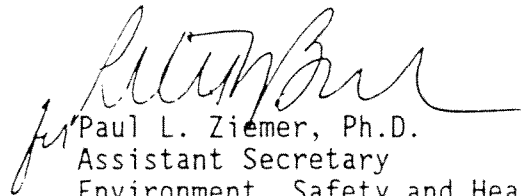
memorandum

DATE: April 16, 1992
REPLY TO: EH-25
ATTN OF:
SUBJECT: Environmental Assessment (EA) for the Steam Plant Ash Disposal Facility and Industrial Landfill at the Oak Ridge Reservation's Y-12 Plant, TN
TO: Leo P. Duffy
Assistant Secretary for
Environmental Restoration and Waste Management

This is in response to your request for approval of the subject EA. On February 21, 1992, the Office of NEPA Oversight authorized you to send the EA to the State of Tennessee for a 14-day pre-approval review period. The State of Tennessee reviewed the EA and had no comments (letter of April 2, 1992). On April 6, 1992, your staff provided a revised EA that incorporates comments provided by the Office of NEPA Oversight on an earlier version of the EA.

The Office of Environment, Safety and Health has completed its review of the subject EA in accordance with our responsibilities under DOE 5440.1D, regarding compliance with the National Environmental Policy Act (NEPA). Based upon my staff's review and recommendations, and after consultation with the Office of General Counsel, I have determined that the EA (DOE/EA-0564) is adequate for publication and that the proposed action is not a major Federal action significantly affecting the quality of the human environment, within the meaning of NEPA. Therefore, the preparation of an environmental impact statement is not required. The basis for the determination is explained in the attached Finding of No Significant Impact (FONSI).

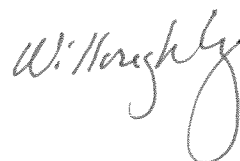
Please note that the Office of Environmental Restoration and Waste Management is responsible for providing public notice of the availability of the EA and FONSI, as required in Section 1506.6(b) of the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA. Please send five copies of the document and a distribution list to the Office of NEPA Oversight for their files.


Paul L. Ziemer, Ph.D.
Assistant Secretary
Environment, Safety and Health

Attachment

cc: Patricia Phillips, DOE/OR (SE-31)
NEPA Compliance Officer

Randal S. Scott, EM-20
NEPA Compliance Officer



FINDING OF NO SIGNIFICANT IMPACT

**STEAM PLANT ASH DISPOSAL FACILITY AND INDUSTRIAL LANDFILL
AT THE OAK RIDGE RESERVATION'S Y-12 PLANT
ANDERSON COUNTY, TENNESSEE**

AGENCY: Department of Energy (DOE)

ACTION: Finding of No Significant Impact

SUMMARY: The DOE has prepared an Environmental Assessment (EA), DOE/EA-0564, evaluating the environmental impacts of constructing and operating a steam plant ash disposal facility and an industrial landfill at the Oak Ridge Reservation's (ORR's) Y-12 Plant in Anderson County, Tennessee. Based on the analysis in the EA, DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an environmental impact statement (EIS) is not required, and the Department is issuing this Finding of No Significant Impact.

ADDRESS AND FURTHER INFORMATION: To obtain copies of the EA and for additional information regarding the proposed project, contact:

Joy L. Sager, Environmental Engineer
Waste Management Division (EW-92)
Oak Ridge Field Office
U.S. Department of Energy
200 Administration Road
Oak Ridge, Tennessee 37831
(615) 576-0850
(615) 576-5333 (Facsimile machine)

For general information on DOE's NEPA process, contact:

Carol Borgstrom, Director
Office of NEPA Oversight (EH-25)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585
(202) 586-4600 or (800) 472-2756
(202) 586-7031 (Facsimile machine)

PROPOSED ACTION: The proposed action involves the installation of a wet ash handling system to dewater bottom ash from the coal-fired steam plant at the ORR's Y-12 Plant and the construction of a new landfill for disposal of industrial wastes and construction/demolition wastes, including dewatered bottom ash and dry fly ash. The DOE operates three major facilities on the ORR: the Y-12 Plant, the K-25 Site, and the Oak Ridge National Laboratory. Operation of these facilities results in the production of a variety of nonhazardous, nonradioactive solid wastes (approximately 300 m³ per day, compacted) including construction debris, sanitary wastes, coal ash, and common industrial wastes. The current method of disposal of coal ash sluice water from the Y-12 Steam Plant into an abandoned water-filled rock quarry violates the Tennessee Water Quality Control Act. The purpose of the proposed action is to (1) facilitate disposal of coal ash from the Y-12 Steam Plant in an environmentally acceptable manner and in compliance with environmental regulations, and (2) provide additional landfill capacity for disposal of nonhazardous, nonradioactive solid wastes generated by the three ORR facilities.

The DOE proposes to open two adjacent areas, totaling about 20 ha (50 acres), on the East Chestnut Ridge (ECR) proposed landfill site to provide disposal

space for approximately 140,000 m³/year (i.e., 185,000 yd³/year) of nonhazardous, nonradioactive solid wastes (uncompacted volumes). Under State of Tennessee solid waste regulations, landfills are classified and permitted based on the type of waste handled. The landfill is being designed for and the site would be developed for receipt of both Tennessee Class IV waste (e.g., construction debris and rubble) and Tennessee Class II waste (e.g., nonhazardous, nonradioactive industrial wastes) in separate areas. Two burial cells would be opened initially, and others would be opened as needed. Class IV disposal cells would be underlain by a 1.5m (5 ft)-thick geologic buffer of soil having a maximum saturated conductivity of 1×10^{-5} cm/second between the base of the fill and the seasonally high water table. Class II disposal cells would be lined with natural and/or synthetic materials and equipped with a leachate collection system above the liner. The liner would be underlain by a geologic buffer of at least 3 m (10 ft) of soil from the bottom of the liner to the top of the seasonally high water table. Leachate would be collected, treated, and discharged through a National Pollutant Discharge Elimination System permit outfall or pumped/transported to another permitted treatment/disposal facility.

The proposed action would include construction and operation of a wet ash handling system at the Y-12 Steam Plant. The system would consist of tanks and bins for collecting and dewatering wet bottom ash. Dewatered ash would be transported by truck to the landfill for disposal. The proposed action also includes the construction and operation of up-gradient and down-gradient groundwater monitoring wells; run-on, runoff, and erosion controls; access and

utilities; a methane gas collection system; a leachate treatment facility; and the construction of a small pond adjacent to the site to replace the wetlands function (wildlife habitat) of two small ponds on the site.

ENVIRONMENTAL IMPACT: The potential environmental consequences of constructing and operating a steam plant ash disposal facility and an industrial landfill were analyzed to determine if there would be any significant impacts from implementing the proposed action. The results of the analyses are summarized below.

The cumulative environmental impacts of the proposed action are expected to be minor. The soils of the ECR site typically exceed 60 feet in thickness and are more than adequate for the development of an industrial landfill. Groundwater is not expected to be impacted under normal operation; a breach in liner integrity, however, could result in landfill leachate reaching groundwater pathways. Slight groundwater contamination is possible over the approximately 25-year life of the industrial landfill; any contamination that occurs is not expected to pose a threat to human health or biota because leachate would not contain toxic, hazardous, or radioactive contaminants. No public or private water supply wells are located between the proposed site or the alternative sites and the Clinch River.

Operation of the ash-dewatering system on the Y-12 Plant site would have negligible impacts on surface water quality because blowdown from the system would be treated at an existing wastewater treatment facility at the Y-12 Plant site, and released in accordance with discharge permits.

The impacts of the proposed action on air quality are expected to be minimal and would be due to localized fugitive dust emissions associated with occasional earthmoving operations; traffic on the unpaved access road; and gaseous exhaust constituents (carbon monoxide, nitrogen oxides, sulfur dioxide, hydrocarbons, and particulate matter) from earthmoving and machines. Fugitive dust would be generated at the ECR site from handling and disposal of fly ash and dewatered bottom ash. However, the dust would not be expected to contain hazardous or radioactive constituents. .

Impacts on terrestrial ecology would be minor because the proposed site is characterized by vegetation common in the region, and no sensitive plant or animal species, including Federally-listed endangered or threatened species, would be affected. Sedimentation associated with construction and operation of the new landfill would cause minor impacts on the biotic communities in the small stream on the site. No State- or Federally-listed endangered or threatened fish or invertebrates are known to occur in or use the stream on the ECR site.

Two wetlands/ponds located on the site would be destroyed in the course of landfill construction and operation. The U.S. Army Corps of Engineers reports that filling such wetlands, which are each smaller than 1 acre, would meet the conditions established in a nationwide permit issued under Section 404 of the Clean Water Act (Dredging and Filling Regulations). The Tennessee Department of Health and Environment, Division of Water Pollution Control, has no objection to the ponds being filled. To prevent a net loss of wetlands habitat, DOE plans to construct a similar pond of the same size as the two

ponds combined, northwest of the site. The elements of a wetlands assessment are incorporated in the EA, which includes information required by Executive Order 11990 (Protection of Wetlands) and associated DOE regulations (10 CFR 1022). There are no floodplains affected by the proposed action.

Because the site is unoccupied and is part of ORR, no impacts to demography would occur. The State Historic Preservation Officer, Tennessee Historical Commission, has no objection to the proposed use of the site.

ALTERNATIVES CONSIDERED: Alternatives considered for dealing with disposal of ash and sluice water included no action, construction of a new steam plant, purchase of steam from an outside supplier, and conversion of the existing plant to natural gas. Alternatives considered for providing long-term waste disposal capability included no action, use of commercial disposal, alternative sites, and reduction of waste generation. Although reduction of waste will be pursued, implementing these options does not remove the need for the proposed action. The other alternatives were rejected for reasons of cost, concerns about reliability and security, and noncompliance with the State of Tennessee's Water Quality Control Act, the State's solid waste regulations, and the Federal Water Pollution Control Act.

DETERMINATION: Based on the analysis provided in the EA, the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, the

preparation of an EIS is not required for the proposed action, and the Department is issuing this Finding of No Significant Impact.

Issued at Washington, D.C., this 16th day of April, 1992.

for 
Paul L. Ziemer, Ph.D.
Assistant Secretary
Environment, Safety and Health