1988 WL 253648 (F.R.)

NOTICES

DEPARTMENT OF ENERGY

Finding of No Significant Impact; Transuranic Waste Management Activities at the Savannah River Plant, Aiken, SC

Tuesday, August 30, 1988

***33172** AGENCY: Department of Energy.

ACTION: Finding of No Significant Impact.

SUMMARY: The Department of Energy (DOE) has prepared an environmental assessment (EA), **DOE/EA-0315,** for transuranic (TRU) waste management activities at DOE's Savannah River Plant (SRP), including the construction and operation of a new TRU Waste Processing Facility. Based on analyses 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 is not required and the Department is issuing this Finding of No Significant Impact (FONSI).

Copies of the EA are available from: Mr. Stephen Wright, Director, Environmental Division, U.S. Department of Energy, Savannah River Operations Office, P.O. Box A, Aiken, South Carolina 29801, (803) 725-3957.

FOR FURTHER INFORMATION CONTACT: Carol Borgstrom, Director, Office of NEPA, Project Assistance, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-4600

Proposed Action: The proposed action involves: (1) Retrieval of stored TRU waste; (2) construction and operation of the TRU Waste Processing Facility (TMF) to process, if necessary, the SRP retrievably-stored and newly-generated waste; and (3) repackaging, certification and shipment of SRP TRU waste to the Waste Isolation Pilot (WIPP), near Carlsbad, New Mexico. The WIPP is a DOE research and development facility designed to demonstrate the safe and environmentally acceptable disposal of radioactive waste from national defense programs. After a five year demonstration phase of operations, scheduled to begin in late 1988, a decision will be made on conversion of the WIPP to a permanent repository for TRU waste.

The proposed action for the SRP TRU waste is consistent with the objectives stated in the "Final Environmental Impact Statement, Waste Isolation Pilot Plant" (DOE/EIS-0026), and will enable SRP to eliminate interim TRU waste storage and the risk of groundwater contamination or air emissions resulting from storage container failure.

TRU waste is radioactive waste from the production of nuclear materials which is contaminated with more than 100 nCl of transuranium elements per gram of waste. SRP TRU waste includes hazardous waste components, such as used oils, which are classified as mixed wastes and are subject to the requirements of the Resource Conservation and Recovery Act (RCRA). SRP will comply with RCRA requirements for mixed waste treatment, storage, and shipping. Compliance with RCRA will not affect the environmental impacts of the management of stored and retrievable TRU waste at SRP.

Proposed TRU waste retrieval activities at SRP will use earthmoving equipment to remove the top three feet of the four-foot soil cover over burial ground storage pads. The remaining soil will be removed with a remotely operated High Efficiency Particulate Air-filtered soil vacuum. Shielded lifting

canisters will be used where possible to lift the waste containers from the pads and into shipping casks for transportation to the new processing facility.

The TWF will be located near the center of the SRP plant site in a chemical separations area which is near SRP burial grounds containing TRU waste. The new facility will process newly-generated and stored TRU waste as necessary to meet WIPP criteria. It is designed to vent, purge, x-ray, and assay the waste storage containers. It will reduce the size of large waste and solidify liquids as necessary. It will then repackage the waste to meet WIPP waste acceptance criteria requirements for shipment and emplacement is the WIPP. TRU waste will be reclassified in an existing SRP waste certification facility (WCF) as either WIPP-certified waste or low-level waste. WIPP- certified waste will be shipped to WIPP and low-level waste will be disposed onsite in accordance with the requirements pertaining to disposal of low-level radioactive waste.

As of December 1987, SRP had approximately 370,000 cubic feet of TRU waste, 56% (207,000 cubic feet) of which is in interim storage. TRU waste which is retrievably stored is in galvanized steel drums on concrete pads or contained in concrete and steel boxes, concrete culverts and galvanized steel drums buried in shallow trenches. The remaining SRP TRU waste is buried as non- retrievable waste. The waste is not currently scheduled to be shipped to WIPP. Management of the nonretrievable TRU waste is not within the scope of the current proposed action but was evaluated in a separate SRP NEPA evaluation, "Final Environmental Impact Statement, Waste Management Activities for Groundwater Protection", (DOE/EIS-0120).

Some newly-generated waste which meets WIPP requirements without processing will be certified in the WCF and is scheduled to be shipped to WIPP starting in 1989. Shipment to WIPP of TRU waste which is retrieved from interim storage is scheduled to begin in 1995. Drums of TRU waste certified to meet WIPP criteria will be transported from SRP to WIPP in double-walled containers referred to TRUPACTs (Transuranic Package Transporters) which incorporate a double-walled design to protect the cargo against collision, puncture, and fire in case of accident. The TRUPACT design will be certified by the Nuclear Regulatory Commission and will meet the requirements of DOE Order 5480.3 "Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances and Hazardous Wastes."

Distances for shipments to WIPP were estimated using an Oak Ridge National Laboratory highway routing model. Potential routings maximized the use of interstate highways from SRP to the New Mexico area within New Mexico to the WIPP facilities near Carlsbad. Potential rail routings were taken from a DOE transportation assessment and guidance report, "Transuranic Waste Transportation Assessment and Guidance Report", (DOE/J1O-002, 1986).

Environmental Impacts

The potential environmental consequences of the proposed action ***33173*** were analyzed for several categories of activities which included: (1) Construction of the TWF; (2) waste retrieval and processing operations; and (3) transportation of waste to WIPP. No significant impacts were determined in any category under routine or accident conditions. The results of the analysis are summarized below.

Construction: The TWF will occupy four and a half acres of previously developed land in H-Area. No new land or structures will be required for retrieval activities in SRP burial grounds. Very minor construction impacts will be experienced onsite. The peak construction work force of 28 workers will have minimal effects on area land use, housing and social services. No significant impacts are expected on ecological resources or archaeological or historical sites.

Retrieval and Processing Operations: Once operational, the new facility will employ 40 people, many already employed at SRP. Liquid wastes from TWF processing operations will be recovered to prevent the release to the environment of low-level radioactive materials. After filtering, routine radioactive airborne releases from the new facility will be extremely small and well within applicable Federal standards. Annual releases to the atmosphere are estimated to be less than 6.7E-05 Ci of plutonium 238 and/or 239. At the plant boundary, the annual maximum individual dose from such releases is projected to be 3.5 E-04 mrem, which is several orders of magnitude below the U.S. Environmental Protection Agency standard of 25 mrem/year for routine radiological releases to the atmosphere (40

CFR 61) and the DOE routine operations standard of 100 mrem/year from all potential exposure pathways (DOE Order 5480.1A). No significant offset impacts are anticipated in connection with routine waste retreval operations.

Routine operations will result in small radiation exposures to the operating personnel. The average occupational dose for routine TRU waste retrieval and processing activities was estimated as 0.22 rem/year. This rate of exposure is well below the DOE annual occupational limit of 5 rem (DOE Order 5480.1A).

The most severe credible accident (fire in a storage culvert in an SRP burial ground trench) would result in a maximum individual dose at the SRP boundary) of 4.4 rem, which is well below the DOE siting guidlines of 25 rem for routine postulated accidental releases for nonreactor nuclear facilities (DOE Order 6430.1 Chapter 1).

Transportation Impacts: For truck and rail shipments of TRU wastes from SRP to WIPP the truck drivers, train crew and population along the route are potentially exposed to low levels of radiation penetrating the transportation package. As previously stated, transportation of TRU waste would be conducted in NRC-licensed shipping containers designed to withstand the most severe accidents without releasing their contents. The maximum calculated does to the onsite and offsite population under routine and accident conditions is projected to be 3.9 person-rem/year (by truck), which is insignificant in comparison to a natural background exposure to the same population of 105,000 person-rem/year. The greatest risk from transportation is nonradiological resulting from trauma associated with vehicle collisions/accidents. However, as an added precaution against radiological risk, overall emergency response plans and procedures are being developed by the Department to address WIPP related transportation accidents.

Alternatives Considered

In the EA, DOE considered the following alternatives to the proposed action of retrieving stored TRU waste and constructing the new processing facility at SRP for shipment of SRP TRU waste to WIPP: no action, periodic container overpacking, onsite disposal, and shipment of unprocessed waste to WIPP.

The no action alternative was determined to be unacceptable because storage containers will deteriorate over time, increasing the potential for container failure and contamination of the environment. The container overpack alternative was determined to be undesirable because TRU waste processing and disposal would be postponed until a later date, increasing the potential for container failure and environmental contamination. In addition, neither of these alternatives would provide for the permanent disposal of TRU waste.

Studies have not been conducted at SRP specifically to determine the technical feasibility of disposing of TRU wastes onsite. Although it is believed that TRU wastes could be disposed in properly engineered concrete vaults onsite, no studies are planned to investigate their onsite disposal

DOE believes that offsite geologic disposal of SRP TRU wastes is environmentally preferable to near surface disposal at SRP. The alternative of transporting unprocessed waste to WIPP was not selected because this waste would not meet WIPP acceptance criteria, thus requiring it to be shipped to an existing processing facility at the Idaho National Engineering Laboratory for final processing before shipment to WIPP. This alternative would result in tripling shipping distances, with corresponding increases in environmental and accidental risk and costs.

Determination:

The proposed TRU waste retrieval and processing activities at SRP, including the proposed TRU waste processing facility, and the subsequent transportation of TRU wastes to WIPP, do not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act. This finding is based on the analyses in the EA. Therefore, an Environmental impact Statement for the proposed action is not required.

Issued at Washington, DC, this 24th day of August, 1988.

Ernest C. Baynard III,

Assistant Secretary, Environment, Safety and Health.

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