1.0 SUMMARY

1.1 PURPOSE AND NEED

The purpose of this Environmental Assessment (EA) is to assess th potential environmental impacts of the retrieval and processing of retrieved and newly generated transuranic (TRU) radioactive waste at the Savannah River Plant (SRP), including the transportation of the processed TRU waste to the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. A new TRU Waste Facility (TWF) will be constructed at SRP to retrieve and process the SRP TRU waste in interim storage to meet WIPP criteria. This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the requirements of the Council of Environmental Quality Regulations for implementing NEPA (40 CFR Parts 1500-1508).

The National Environmental Policy Act (NEPA) requires the assessment of environmental consequences of all major Federal actions that may affect the quality of the human environment. This document describes the environmental impact of constructing and operating the TWF facility for processing and shipment of the TRU waste to WIPP and considers alternatives to the proposed action. The new facility will handle TRU waste requiring processing prior to certification to meet WIPP waste acceptance criteria. It will then be shipped to WIPP. The WIPP is a DOE research and development facility designated to demonstrate the safe and environmentally acceptable disposal of radioactive waste from the National Defense programs. The proposed action will eliminate storage of TRU waste at SRP in support of the 1983 DOE Defense Waste Management Plan (DOE/DP-0015), improve waste management practices at SRP, and allow SRP burial grounds to be closed according to DOE directives.

For this assessment newly-generated waste means waste generated by current operations; certified waste means waste packaged to meet WIPP acceptance criteria; retrieved waste or retrievable waste means waste retrieved, or capable of being retrieved, from above ground storage pads or concrete culverts exhumed from below grade trenches in SRP burial grounds.

SRP is scheduled to begin shipping certified newly-generated waste to WIPP in 1989. By 1995 when SRP is scheduled to begin shipping retrieved TRU waste to WIPP, an estimated 370,000 cubic feet of TRU waste will have accumulated in interim storage at SRP. The TWF facility is designed to process approximately 15,000 cubic feet of retrieved waste and 6,200 cubic feet of newly-generated waste annually, which is the forecasted yearly generation from 1995 to 2013.

1.2 PROPOSED ACTION AND ALTERNATIVES

The proposed action is to process retrieved and newly-generated TRU radioactive waste at SRP and ship certified TRU waste to New Mexico for WIPP. The new TWF facility will be constructed to retrieve and process TRU waste in interim storage to meet WIPP criteria.

In a 1980 DOE study on TRU waste, the Department examined alternatives to the proposed action, including 34 alternatives for managing both stored and buried SRP TRU solid waste and four additional management alternatives for retrievably stored waste. The following alternatives were selected for consideration:

- No-Action/Leave TRU waste as it is on storage pads and place newly-generated wastes on storage pads;
- Overpack all containers every 20 years and replace them on storage pads;
- Onsite disposal;
- Ship unprocessed waste offsite to the Idaho National Engineering Laboratory for processing and then to WIPP.

1.3 AFFECTED ENVIRONMENT OF THE PROPOSED ACTION

The total area impacted by construction of the new TWF facility will be about 4 acres of previously developed land inside H-Area at SRP. H-Area is a principal industrialized area at SRP located within existing safeguards and security systems and approximately 7 miles away from the SRP boundary. The proposed TWF facility site is located about a mile from SRP burial grounds (designated as 643-G, 643-7G, and 643-28G), where TRU waste has been retrievably stored and buried. No new facilities will be required at SRP burial grounds for TRU waste retrieval. No endangered or protected plant or animal species are found on or adjacent to the proposed TWF facility site or the burial grounds. A more complete description of the area may be found in Chapter 4.

1.4 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

The new TWF facility and associated retrieval and shipping of TRU waste to WIPP will reduce potential air emissions and groundwater contamination at SRP by eliminating a source of contamination at SRP. TRU waste in interim storage at SRP will be eliminated as the TWF facility safely retrieves and processes this TRU waste while minimizing potential environmental effects and occupational radiation exposure.

Two-thirds of the waste retrieved from the burial ground is expected to be classified as TRU waste and will be certified for shipment to WIPP. The remaining one-third is expected to be classified as low level waste and will be disposed of at SRP. No TRU waste buried prior to 1970 will be shipped to WIPP. Pre-1970 TRU waste that was buried at SRP has been evaluated in the "Final Environmental Impact Statement, Waste Management Activities for Groundwater Protection," (DOE/EIS-0120) (Groundwater EIS). This EIS evaluated the potential environmental and human health effects of waste - including buried, nonretrievable TRU waste - in SRP's burial grounds. DOE determined in its Record of Decision that closure of these burial grounds without removing the buried wastes provided acceptable environmental and human health protection. The final determination on the appropriate closure of these burial grounds will be made in accordance with applicable regulations and after consulting regulatory authority(s). Table 1-1 summarizes the potential impacts of the proposed action at SRP, including transportation impacts.

Table 1-1: POTENTIAL IMPACTS FROM RETRIEVING, PROCESSING AND TRANSPORTING SRP TRU WASTE TO WIPP

Socioeconomic	Total construction work force will increase SRP employment by 28 people. During operation, the SRP work force will increase by approximately 40. Direct and composite impacts are negligible compared to the total SRP employment of approximately 16,700 people.
Land Use	Approximately four and one half acres of land in the H-Area chemical separations area will be used for the TWF facility. No additional land or new structures will be required for waste retrieval from storage in SRP burial grounds. No indirect impacts are expected.
Water Quality	Effective erosion control measures will be employed during TWF facility construction by using hay bales, grass, wind screens, and diversion ditches. All TWF facility water supplies will be obtained from groundwater using existing H-Area wells with no impacts on aquifer water quality or offsite levels. There will

Table 1-1: POTENTIAL IMPACTS FROM RETRIEVING, PROCESSING AND TRANSPORTING SRP TRU WASTE TO WIPP (CONT.)

	be no releases to groundwater or to plant streams. Small amounts of low level radioactive waste water generated from personnel decontamination will be collected and sent to low level waste tanks for disposal.
Air Quality	Construction impacts from fugitive dust are expected to be negligible. Any routine air emissions from these TRU waste processes and activities, plus all other SRP releases, are expected to be well below applicable State and Federal standards. A National Emissions Standards for Hazardous Air Pollutants (NESHAP) permit for possible radionuclide air emissions from the TWF facility will be obtained from EPA to meet 40 CFR 61 requirements for facility construction.
Ecology	Construction and operation will occur on an industrially developed site that is marginal for wildlife habitat. No endangered or protected species have been found on the proposed site. No wetlands areas or archeological sites exist on the proposed site.
Radiological	No exposures to the public will result from construction activities. Occupational exposure for personnel involved in TRU waste activities will be monitored and controlled to be as low as reasonably achievable. Radiation doses due to routine atmospheric releases are calculated to be 3.5E-04 mrem/yr to an offsite individual at the SRP boundary which is 0.0014% of the applicable Environmental Protection Agency (EPA) standard of 25 mrem/yr (40 CFR 61). The population exposure due to routine atmospheric releases from TRU processing activities is estimated to be 1.2×10^{-2} person-rem/yr which translates to approximately 1×10^{-6} latent cancer fatalities/yr. The

	maximum calculated dose to an offsite individual at the SRP boundary from a retrieval accident would be 4.4 rem. The maximum calculated dose to an offsite individual from a process accident would be 2.0 rem. TRU waste activities will be conducted so as to mitigate the occurrence and consequences of accidents.
Transportation	The maximum calculated dose to the onsite and offsite population from TRU waste shipments within SRP for processing and from SRP to WIPP would be 4 person-rem/year. For comparison, the radiation dose to this same population from natural background radiation is approximately 105,000 person-rem/year.