

described in this statement (Type III). Additional tanks similar to the storage facilities described in these statements will be required in the future. The environmental effects of these tanks are discussed in Section III herein. The other statement⁸ covers a facility for further processing of ²³⁸Pu oxide produced at SRP into compact shapes for use as fuel in radioisotope thermoelectric generators. This facility is being constructed in an existing process building near the center of the plantsite.

A. DETAILED DESCRIPTIONS

1. WASTE MANAGEMENT PHILOSOPHY AND PLANS

The ERDA policies quoted above are implemented by a system of administrative controls. These include:

- Guides for the annual exposure to individuals in the off-plant population caused specifically by release of radioactivity from the Savannah River Plant. These guides and their bases are described in Appendix D.
- Operating guides for the release of individual radionuclides from plant facilities. The 1976 operating guides described in Appendix D reflect an adjustment of the 1975 operating guides based on their comparison with 1975 releases and anticipated production requirements (the comparison of 1975 releases to guides is included in Section III).

As much of the waste produced at the Savannah River Plant as is technically and economically practical is stored onsite. Releases of radionuclides are prevented if practical, even if the level of activity is below existing guidelines. Current plans for the management of radioactive waste at the Savannah River Plant is presented in SRO-TWM-76-1,⁹ which is updated annually to reflect new technical developments and changes in policies and criteria. Planning options are discussed in Section V of this environmental statement. There is no single document that covers plans for the different nonradioactive wastes generated at SRP. Several plans are discussed in Sections II and V of this environmental statement.

2. LOCATION OF FACILITIES

The Savannah River Plant (SRP) occupies an approximately circular area of 300 square miles (192,000 acres) in South Carolina, 25 miles southeast of Augusta, Georgia (Figure II-1). The population distribution in the region surrounding SRP is presented in Appendix G (Figure G-1). The site occupies parts of three South Carolina counties (Aiken, Barnwell, and Allendale)

and borders the Savannah River for approximately 17 miles. The site is a closed government reservation except for controlled through-traffic on South Carolina Highway 125 (SRP Road A) and the Seaboard Coastline Railroad, and controlled access for environmental study.

The Savannah River Plant was constructed during the 1950s to produce the basic materials used in the fabrication of nuclear weapons, primarily plutonium-239 and tritium. The uranium necessary for this production is received from Oak Ridge, Tennessee (enriched uranium) and Fernald, Ohio (depleted uranium). The plutonium and tritium products are sent to ERDA weapons plants, primarily the Rocky Flats Plant in Colorado. Only ERDA's facilities at Hanford in eastern Washington are also capable of producing plutonium for weapons purposes.

The plant facilities (Figure II-2) consist of three operating nuclear production reactors (P, K, and C), two nuclear production reactors in standby condition (R and L), a small test reactor in standby condition (U), two separations areas for processing irradiated materials (F and H), a heavy water extraction and recovery plant (D), a fuel and target fabrication facility containing two test reactors (M), the Savannah River Laboratory (a process development laboratory to support production operations and containing two test reactors) and administrative facilities (A), and the many non-nuclear facilities necessary for plant operations.

The major waste storage areas for radioactive liquids, sludges, and crystallized salts are adjacent to the separations areas and consist of two tank farms linked to the separations areas and to each other by pipelines with secondary containment. In addition, a 195-acre burial ground area located between the F and H separations areas is used for controlled storage of solid radioactive wastes. The reactors, separations areas, and waste storage areas are at least 4 miles from the nearest plant boundary. Figure II-3 shows the waste storage areas and several of the major production facilities and terrain features of the central portion of the plantsite.

Three nuclear facilities are either planned, under construction, or in use adjacent to SRP (Figure II-2). Georgia Power Company plans to construct two power reactors at the Alvin W. Vogtle Nuclear Plant on the Savannah River at the southwest boundary. The Barnwell Nuclear Fuel Plant of Allied-General Nuclear Services is under construction on the eastern boundary for chemical separations of commercial reactor fuels. A commercial facility for burying noxious chemicals and low-level radioactive wastes, Chem-Nuclear Services, is located adjacent to the Allied-General facility.