Preface

The *Savannah River Site Environmental Report for 2003* (WSRC–TR–2004–00015) is prepared for the U.S. Department of Energy (DOE) according to requirements of DOE Order 231.1, "Environment, Safety and Health Reporting," and DOE Order 5400.5, "Radiation Protection of the Public and Environment." The report's purpose is to

- present summary environmental data that characterize site environmental management performance
- confirm compliance with environmental standards and requirements
- highlight significant programs and efforts
- assess the impact of SRS operations on the public and the environment

This year's report reflects a continuing effort (begun in 2001) to streamline the document and thereby increase its cost effectiveness—without omitting valuable technical data. To that end each author will continue to work toward presenting results in summary fashion, focusing on historical trends. Complete data tables again are included on the CD inside the back cover of the report. The CD also features an electronic version of the report; an appendix of site, environmental sampling location, dose, and groundwater maps; and complete 2003 reports from a number of other SRS organizations.

SRS has had an extensive environmental monitoring program in place since 1951 (before site startup). In the 1950s, data generated by the onsite environmental monitoring program were reported in site documents. Beginning in 1959, data from offsite environmental surveillance activities were presented in reports issued for public dissemination. SRS reported onsite and offsite environmental monitoring activities separately until 1985, when data from both programs were merged into one public document. The *Savannah River Site Environmental Report for 2003* is an overview of effluent monitoring and environmental surveillance activities conducted on and in the vicinity of SRS from January 1 through December 31, 2003. It is prepared by the Environmental Services Section (ESS) of Westinghouse Savannah River Company (WSRC). The "SRS Environmental Monitoring Plan" (WSRC–3Q1–2–1000) and the "SRS Environmental Monitoring Program" (WSRC–3Q1–2–1100) provide complete program descriptions and document the rationale and design criteria for the monitoring program, the frequency of monitoring and analysis, the specific analytical and sampling procedures, and the quality assurance requirements.

Report Available on Web

Readers can find the *SRS Environmental Report* on the World Wide Web at the following address:

http://www.srs.gov/general/pubs/ERsum/index.html

To inquire about the report, please contact

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Variations in the environmental report's data content from year to year reflect changes in the routine program or difficulties encountered in obtaining or analyzing some samples. Examples of such problems include adverse environmental conditions (such as flooding or drought), sampling or analytical equipment malfunctions, and compromise of the samples in the preparation laboratories or counting room.

The following information should aid the reader in interpreting data in this report:

- Analytical results and their corresponding uncertainty terms generally are reported with up to three significant figures. This is a function of the computer software used and may imply greater accuracy in the reported results than the analyses would allow.
- Units of measure and their abbreviations are defined in the glossary (beginning on page 83) and in charts at the back of the report.
- The reported uncertainty of a single measurement reflects only the counting error—not other components of random and systematic error in the measurement process—so some results may imply a greater confidence than the determination would suggest.
- An uncertainty quoted with a mean value represents the standard deviation of the mean

value. This number is calculated from the uncertainties of the individual results. For an unweighted mean value, the uncertainty is the sum of the variances for the individual values divided by the number of individual results squared. For a weighted mean value, the uncertainty is the sum of the weighted variances for the individual values divided by the square of the sum of the weights.

- All values represent the weighted average of all acceptable analyses of a sample for a particular analyte. Samples may have undergone multiple analyses for quality assurance purposes or to determine if radionuclides are present. For certain radionuclides, quantifiable concentrations may be below the minimum detectable activity of the analysis, in which case the actual concentration value is presented to satisfy DOE reporting guidelines.
- The generic term “dose,” as used in the report, refers to the committed effective dose equivalent (50-year committed dose) from internal deposition of radionuclides and to the effective dose equivalent attributable to beta/gamma radiation from sources external to the body.