

## SAVANNAH RIVER SITE (SRS)

### Phase II of the SRS Dose Reconstruction Project

#### HISTORY OF THE SAVANNAH RIVER SITE (SRS)

The SRS is a nuclear weapons facility located near Aiken, South Carolina, and Augusta, Georgia. Beginning in 1953, the Du Pont Company produced plutonium and tritium at the Savannah River Site (SRS) for the United States government. The Savannah River Site consisted of five nuclear reactors, two large chemical processing plants and other facilities essential to create and process nuclear weapons materials. In December of 1953, the Site's R reactor was brought online, and in June of 1954 the first irradiated fuel was removed from this reactor. Beginning in November of 1954, plutonium was extracted from the fuel in a chemical processing facility called the 221-F canyon. Tritium, the other primary SRS product, was extracted from reactor-irradiated lithium-aluminum targets beginning in October 1955 in the 200-F area. Production of these and other nuclear materials continued at the site for the next 30 years. Over the years the Site released some plutonium and tritium, along with other radioactive materials and chemicals, to air and water. Some people living near the SRS during these past operations are concerned that those releases may have damaged their health. The five production reactors which were used to make plutonium and tritium are now permanently shut down. (Some processing and support, waste management and environmental remediation facilities are still operating.)

#### THE SRS DOSE RECONSTRUCTION PROJECT

Because past tritium and plutonium processing and waste management operations at SRS had the potential to release plutonium, tritium and other materials to the environment, the Centers for Disease Control and Prevention (CDC) initiated an Environmental Dose Reconstruction study at the Savannah River Site (SRS) in 1992. The study is being conducted to determine if the health of people who lived near the site was affected by past releases of chemicals and radioactive materials from the site. A Memorandum of Understanding between the Department of Energy (DOE) and the Department of Health and Human Services (HHS) prompted this dose reconstruction at the SRS. The SRS Dose Reconstruction project is designed to be carried out in five phases:

Phase I: A systematic review of available documents at SRS and the development of a document database.

**Phase II: Initial source term development and pathway analysis. This work consisted of estimating the amount of radioactive materials and toxic chemicals released to the environment from SRS from 1954-1992.**

Phase III: Screening Dose and Exposure Calculations (At the conclusion of this phase, a decision will be made, in consultation with the SRS Health Effects Subcommittee, as to which radionuclides and/or chemicals will be included in Phases IV and V.)

Phase IV: Developing methods for assessing environmental pathways and environmental doses

Phase V: Calculation of environmental exposures and doses

*The source term for a chemical or radionuclide tells us:  
How much?  
When? Where?  
and in What Form?  
the material was released.*

Phase I of this study was completed in June 1995. The contract for Phase II of the SRS Dose Reconstruction was awarded to the Risk Assessments Corporation (RAC, formerly Radiological Assessments Corporation) and began in October 1995. This current draft report highlights activities of Phase II of the study and provides the source term. Phase II of the Environmental Dose Reconstruction Project examined the history of SRS operations to estimate the magnitudes of such releases.