SRS Citizen's Advisory Board

Recommendation No. 7

July 25, 1995

Tritium Health Effects Study

Tritium is the primary radionuclide released from SRS (in 1994, approximately 160,000 curies of airborne tritium, roughly divided into an elemental gaseous state and into an oxide or water-vapor state, were released from the tritium production facility at SRS; 2,000 curies of tritium oxide were released directly from the SRS Effluent Treatment Facility; and 10,000 curies of tritium oxide migrated into Four Mile Creek and the Savannah River from seepage basin groundwaters and the SRS radioactive waste burial ground; cf. SRT-ETS-950087). Because of these releases, tritium is the primary health concern to residents offsite of SRS (radioactive half-life of 12.4 years; an approximate residence half-life in the human body of 10 days and the DNA chain of 300 days).

In March 1995, the Oak Ridge Institute for Science and Education, ORISE, reported to the public that an excess of deaths due to leukemia had been found in its health study of SRS workers. The study did not assess the effects of specific radionuclides. Recognizing that any health effects from tritium should be more readily found in onsite workers, we understand that a further analysis will attempt to determine if tritium was a cause of the leukemia.

If this new analysis leads to the finding that tritium was a significant contributing factor, and if supported by an independent scientific peer review, then the CAB recommends that:

1. A study of the biological effects of tritium on DNA be conducted in SRS workers; and that
2. Contingent upon a finding that tritium is a DNA biomarker for health effects in SRS workers, studies in the offsite residential population be conducted of tritium biomarkers and genetic effects.

(This recommendation is provided to the National Institute for Occupational Safety and Health and the Centers for Diesease Control)

Visit the Savannah River Region Health Information System (SRRHIS) Website for more health-related information. This group began monitoring cancer incidence in the SRRHIS region in 1991.

Agency Responses

Department of Energy-SR

National Institute for Occupational Safety & Health