



Savannah River Site Citizens Advisory Board

Environmental Remediation & Waste Management Subcommittee

Meeting Summary

April 24, 1995

Augusta, Ga.

The Environmental Remediation & Waste Management Program Subcommittee Working Group met on Monday, April 24, 1995 from 5:00 p.m. to 7:00 p.m. at the Partridge Inn in Augusta. Bill Lawless presided over the meeting. Other subcommittee members present were Kathryn May. Rick Hornung and Paul Schulte of the National Institute of Occupational Safety and Health (NIOSH), Ohio office attended. Gerri El, Jerry Nelsen, and deLisa Bratcher of the Department of Energy's Savannah River Operations Office also attended. Attendees from Westinghouse Savannah River Company (WSRC) were Clay Jones, Charles Murphy, Leslie Huber, Mary Flora, Ken Crase, and Anne Roe. Concerned citizens in attendance included Todd Crawford, Lee Poe, and Dorothy Poe.

The purpose of the meeting was to discuss ways to look at the health effects associated with tritium found in the SRS environment with NIOSH representatives. Bill Lawless provided an overview of the Savannah River Site and a discussion of pathways of tritium entry into the environment. In the past these sources of tritium included the burial ground (crucibles), ground water, tritium facilities, the Effluent Treatment Facility, (ETF), and Reactors. Current sources of tritium in the Savannah River are groundwater migration (10,000 curies annually), SRS Effluent Treatment Facility (2,000 curies annually), and airborne releases.

Mr. Lawless stated that the health effects of tritium in the body is well studied but the information on the effect of tritium on DNA appears to be lacking. Therefore, the subcommittee discussed whether NIOSH could issue a Request For Proposal (RFP) on tritium effects on DNA. Three possible effects of tritium on DNA include 1) mutational, 2) structural impacts to DNA due to change in size of atom, and 3) electro-chemical effects.

Ken Crase outlined some existing studies which have been done and explained that tritium dose in the general public is calculated from release data, but not measured by SRS. Some of the recent articles mentioned included a 1993 issue of Health Physics Journal devoted to tritium health effects, as well as articles published in 1991 and 1994. Dr. Crase explained that health risk is measured in physics units, with a Quality Factor used to convert radiation to REM (energy absorbed/unit mass x effectiveness of radiation, i.e. the Quality Factor, = REM). The Quality Factor for tritium is currently 1.0.

Dr. Crase recommended that other sources of information are the independent groups who study potential health effects and research radiation safety issues. The National Council for Radiation Protection, NCRP, which is funded by Congress and has been studying these issues for 60 years is one such group. The SRS Dose Reconstruction Survey being completed by Dr. John Till and the Savannah River Region Health Information System, which tracks cancer cases and is headed by John Dunbar, were also discussed.

Rick Hornung explained the thirteen member Advisory Committee to the Department of Health & Human Services, (HHS), which reviews and sets priorities for NIOSH projects. Mr. Hornung then discussed the March 20, 1995 NIOSH meeting at which a study that found positive dose response or correlation between radiation exposures and leukemia incidences among SRS workers. However, the different radionuclide constituents were not separated out individually in the study. The next meeting for their Advisory Committee is May 4-5 in Alexandria, VA. and after that meeting NIOSH will have more information on the potential for a study on the health effects of tritium.

Dr. Lawless then defined the real issue as citizens wanting an answer to the question, "What is the real risk associated with drinking tritium contaminated water from the Savannah River?" Hornung then noted that NIOSH's sister agency, the National Center for Environmental Health, could help address this question because they deal with people who live around a site, whereas, NIOSH focuses on site workers. Other issues discussed included: correlating worker effects of tritium exposure to the general population, preparing a baseline measuring worker exposures before clean-up work vs. exposures after clean-up work is completed, and the use of biomarkers in gathering exposure data.

Dr. Lawless thanked NIOSH for attending the meeting and contributing their expertise; and said that given NIOSH input he would work on developing a draft motion. Attached is that draft motion, prepared by Bill Lawless, with comments requested by June 15th, on pursuing a study of tritium effects.

Attachments:

1. Issues to be addressed
2. Draft Motion on Tritium Effects Studies

Note: Handouts may be obtained by calling the SRS CAB toll-free number at 1-800-249-8155.