EPA R4 ORC ID:404-562-9598 MAY 15'01 14:03 No.001 P.01

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

May 15, 2001

4EAD

Mr. Andrew R. Grainger
NEPA Compliance Officer
Savannah River Site
Building 742-A, Room 185
Aiken, SC 29802

RE: EPA Review and Comments on
Savannah River Site Salt (SRS) Processing Alternatives
Draft Supplemental Environmental Impact Statement (DSEIS)
CEQ No. 010097

Dear Mr. Grainger:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject Draft Supplemental Environmental Impact Statement (DSEIS). The document provides information to educate the public regarding general and project-specific environmental impacts and analysis procedures, and follows the public review and disclosure aspects of the NEPA process. The purpose of this letter is to give you the results of our review of the DSEIS.

The DOE proposes to select a salt processing technology to design, construct, and operate the facilities required to process high-level waste (HLW) salt. The document evaluates alternatives for separating the high-activity and low-activity salt waste from the liquid high-level radioactive waste now stored in underground tanks at SRS. The DSEIS evaluates alternatives for separating high-activity and low-activity fractions of the liquid high-level radioactive waste, which is now stored in underground tanks at SRS. The document evaluates potential environmental impacts of alternatives to the In-Tank Precipitation Process (ITP).

Thank you for the opportunity to comment on this DSEIS. Based on the information provided in the DSEIS, the rating for this document is "EC-2," that is, we have environmental concerns about impacts of the project, and more information is needed. Our concerns are detailed in the attached comments, and primarily pertain to details of potential alternatives. L10-1

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Please keep us informed of any technical and/or policy meetings related to this project. If you have any questions or require technical assistance, you may contact Ramona McConney of my staff at (404) 562-9615.

Sincerely,

Heinz J. Mueller, Chief
Office of Environmental Assessment

Enclosure

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EPA Comments on
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Draft Supplemental Environmental Impact Statement (DSEIS)

NEPA Process - Distribution of the DSEIS to the public was thorough; it appears that all appropriate federal and state agencies, libraries, citizens groups, and individuals received copies of the document and had the opportunity to comment.

Cumulative Impacts - We note that any new facility would be sited on previously disturbed and developed land, and we appreciate this effort to avoid further impacts to the environment. Section 6.2 lists several environmental media which would be affected by potential emissions from implementation of the alternatives. L10-2

While it is noted on page 6-6 that air emissions from the new facility would be below applicable limits, it is unclear what the total effects and cumulative impacts of the combined air, groundwater, and waste emissions would be, in conjunction with the other operations already existing at SRS. L10-3

Alternatives - Four proposed alternatives were developed for the processing of High Level Waste (HLW) remaining from the production of tritium for the U.S. nuclear weapons program. The waste is in alkaline form, and consists of a salt solution and insoluble sludge. Both components contain highly radioactive residues.

For Direct Disposal in Grout (DDG), prior to solidifying the salt solution as grout, monosodium titanate would be used to remove the strontium and actinide to meet saltstone waste acceptance criteria as Low Level Waste. All processes will yield final waste forms to be incorporated in a vitrified glass and saltstone, which is a cement-like mixture. The first process proposed is Small Tank Precipitation. Sorption and precipitation processes would be used to remove the radioactive components, which consists of strontium, plutonium, and cesium. The second process is Ion Exchange. This is a sorption and ion exchange process. The third process is solvent extraction, which consists of sorption and organic extraction. The fourth and last process is Direct Disposal in Grout and consists of sorption.

Sec.2.8.1, page 2-24, states that if the preferred three treatments are deemed not feasible, Direct Disposal in Grout (DDG) would be the next alternative. DOE states on page 2-24 that SCDHEC "...and EPA indicate general acceptance of the Direct Disposal in Grout concept,..." If the DDG Alternative were selected, EPA would need further details. This issue is related to the whole matter of when is waste deemed no longer High-Level, which has yet to be demonstrated by DOE. L10-4

The amount of curies of Cs-137 of concern [for disposal] for the Ion Exchange Alternative does not appear to be clarified in the tables associated with the discussion [e.g., Table 2-3, 2-4, etc.]. This does not necessarily imply that this should be considered a less preferred alternative. In addition, the amount of waste generated per alternative is not apparent from the information in Table 4-19. L10-5 L10-6

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Table 3-1, P.3-12, contains incorrect MCLs for some radionuclides. The MCL for uranium was finalized in 10/00 at 30 ug/L. The other radionuclides, beta/photon, remain the same as the original 1976 levels, as calculated 4mrem/yr per ICRP2 or NBS69. Likewise, Table 3-6, P.3-22 has incorrect MCLs for some radionuclides. As well the units should be in pCi/L. Please correct all tables to these units [another e.g. Table 3-8]. L10-7 L10-8

The main differences between the alternatives are the amounts of technology that must be developed to construct and operate each facility. Pilot plants will be required for all alternatives except for the DDG option. It must be established that the final waste form resulting from DDG is not High Level Waste and complies with 65 FR 1608, which addresses surplus weapons-grade plutonium. Building specs would be similar for all alternatives, but DDG facility would be somewhat smaller, less costly, less water and electricity usage. Severe accident potential is also less for DDG, and DDG would contribute the smallest amount of liquid high-level waste. L10-9

Response to Comment Letter L10:

L10-1 DOE has added additional information.

L10-2 No response required.

L10-3 Chapter 6 deals with the impacts associated with the construction and operation of salt processing facilities. Cumulative impacts are presented in Chapter 5. See Tables 5-1 and 5-3 for the cumulative emissions to air and water. Table 5-4 presents cumulative waste generation.

L10-4 Section 2.4 and 2.8 have been modified to address this concern. DOE has identified caustic side solvent extraction as the preferred alternative.

L10-5 Tables 2-3 and 2-4 account for product inputs and outputs. The curie content of the process streams is taken into account in the Chapter 4 analysis of impacts.

L10-6 DOE has revised Table 4-19 in an attempt to clarify waste generation quantities. Each waste type has been reported and compared in its conventional units.

L10-7 Table 3-1 has been revised.

L10-8 Table 3-6 has been updated. The source document reports the values as μci/ml (microcuries per milliliter), therefore DOE chose to retain the units for ease of comparison.

L10-9 Section 7.1 discusses the process of determining waste incidental to reprocessing.