UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

DEC - 8 1992

MEMORANDUM FOR: Jack R. Strosnider, Jr., Chief
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

FROM: Sher Bahadur, Acting Chief
Low-Level Waste Management Branch
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

SUBJECT: REQUEST FOR REVIEW OF THE WESTINGHOUSE TOPICAL REPORT ON FULL REACTOR COOLANT SYSTEM CHEMICAL DECONTAMINATION

The purpose of this memorandum is to provide the generic discussion you requested on the requirements of 10 CFR Part 61 and the associated Branch Technical Position on Waste Form (TP) as it relates to the certification for burial of radioactive waste generated in the Reactor Coolant System (RCS) decontamination process which is being proposed for use by the Westinghouse Corporation.

The "Licensing Requirements for the Land Disposal of Radioactive Waste," 10 CFR Part 61, contains the applicable regulatory requirements for low-level waste disposal. More specifically, 10 CFR 61.55 and 61.56 contain the waste classification and waste characteristics requirements applicable to waste generators. These waste generator requirements help to assure that the disposal site will achieve and maintain its long-term stability as required by the performance objective in 10 CFR 61.44.

The Westinghouse Corporation Topical Report (TR) entitled, "Dilute Chemical Decontamination of the Full Primary System of a BWR Using the LOMI Process," contains projections of the quantities, chemical characteristics, and radiological and physical form of decontamination products generated in a full reactor coolant system decontamination. In addition, the TR specifies that reactor coolant resin will be shipped to both the Barnwell Disposal Facility and the Richland Washington Disposal Facility. The TR states that resin waste requiring stabilization following decon operations (Class A stable, Class B and Class C stable) will be packaged in either high integrity containers or solidified in cement. We would like to point out that the TP and the new appendix to this TP (enclosed) provides guidance on acceptable methods to meet the stability requirements of 10 CFR Part 61. At the present time, NRC has not granted a certification for a process to dispose of decontamination resin waste at any of the three operating disposal sites and the complete criteria necessary for proper disposal of this unique waste may not be contained in the TP on waste form.

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The TP emphasizes the importance of characterizing each particular waste stream which will be produced in the decontamination operations. For the Westinghouse full reactor coolant system decontamination wastes, the vendor will need to identify the entire range of waste constituents and elemental concentrations and determine if and how they will affect the ability of the proposed solidification formulations and the selected high integrity containers to meet the stability requirements over the long term. In addition, Westinghouse proposes to seek approval for a wide range of waste stream types and with varying chemical compositions (including Boiling Water and Pressurized Water Reactor coolant decontamination resins). The vendor's TR should focus on the results of the sampling data submitted to characterize each individual waste stream and test data sufficient to show that these generic compositions will meet the stability requirements of 10 CFR Part 61 and the TP on waste form. As explained in our memorandum to W. Bateman (Acting Branch Chief, Materials and Chemical Engineering Branch) on July 20, 1992, the NRC cannot begin a meaningful review of the TR until testing equivalent to that specified in the TP has been completed by the vendor and the vendor has concluded that the proposed waste formulations will meet the intent of 10 CFR Part 61.

If you have any further questions regarding this memorandum, please contact me at 504-2553 or Roy Person of my staff at 504-2575.

ORIGINAL SIGNED BY

Sher Bahadur, Acting Chief
Low-Level Waste Management Branch
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
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Enclosure: As stated

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The TP emphasizes the importance of characterizing each particular waste stream which will be produced in the decontamination operations. For the Westinghouse full reactor coolant system decontamination wastes, this means identifying the entire range of waste constituents and elemental concentrations which will affect the ability of the proposed solidification formulations and the selected high integrity containers to meet the stability requirements over the long term. At the present time, NRC has not granted a certification for a process to dispose of decontamination resin waste at any of the three operating disposal sites and the complete criteria necessary for proper disposal of this unique waste may not be contained in the TP on waste form. In addition, Westinghouse proposes to seek approval for a wide range of waste stream types and with varying chemical compositions (including Boiling Water and Pressurized Water Reactor coolant decontamination resins). Review of this TR will focus on the results of the sampling data submitted to characterize each individual waste stream and test data sufficient to show that these generic compositions will meet the stability requirements of 10 CFR Part 61 and the TP on waste form. As explained in our memorandum to W. Bateman (Acting Branch Chief, Materials and Chemical Engineering Branch) on July 20, 1992, NRC can not begin a meaningful review of your TR until testing equivalent to that specified in the TP has been submitted.

If you have any further questions regarding this memorandum, please contact Roy Person of my staff at 504-2575.

Sher Bahadur, Acting Chief
Low-Level Waste Management Branch
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