June 3, 1997

Mr. Nicholas J. Liparulo, Manager
Nuclear Safety and Regulatory Analysis
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
P.O. Box 355
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION (RAIs) ON AP600 SHUTDOWN EMERGENCY RESPONSE GUIDELINES (ERGs)

Dear Mr. Liparulo:

The Nuclear Regulatory Commission Reactor Systems Branch needs additional information to complete its review of the AP600 shutdown ERGs. Enclosed are RAIs on the AP600 shutdown ERGs for which Westinghouse responses are requested.

If you have any questions regarding this matter, you can contact me at (301) 415-1141.

Sincerely,

original signed by:

William C. Huffman, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket No. 52-003

Enclosure: As stated

cc w/enclosure:
See next page

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Docket No. 52-003
AP600

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AP600-SHUTDOWN ERGs

GENERAL COMMENTS

440.648 Westinghouse should explain why the shutdown safety status tree SDF-0.1 does not show the conventional critical safety functions such as Subcriticality, Core Cooling, Heat Sink, Integrity, Containment and Inventory.

440.649 The ERGs, in general, should provide symptom-based, as opposed to event-based guidance to the operator. It is not clear that the AP600 Shutdown ERGs are symptom based. The shutdown safety status tree "BLOCKS" 1 to 9 shown in SDF-01 may not cover all possible symptoms during shutdown conditions. In addition, the six shutdown ERGs, SDG-1 to SDG-6, seems to be event-based procedures. These six shutdown ERGs also may not comprehensively cover all the critical safety functions for shutdown conditions. Clarify the ERG philosophy used for shutdown conditions.

440.650 A number of shutdown ERGs contain the statement: "Include additional AP600 details in the EOPs." Please explain why these details are not included in the ERGs and how these details will be developed.

440.651 A number of shutdown ERGs state: "Go to appropriate plant procedure." How is the appropriate plant procedure determined? Should not criteria for exiting the ERGs in these situations be verified to exist and specified in the ERGs?

440.652 What is a "BLOCK" in the Shutdown Safety Status Tree? Are they alarms in the control room?. Are there any symptoms or entry conditions to the shutdown ERGs besides the condition of the shutdown safety status tree?

SDG-1 RESPONSE TO LOSS OF RCS INVENTORY DURING SHUTDOWN

440.653 Background information Section 3.2, Page 3-3: Change reference from step 9 to step 11, and from step 25 to 27 to correctly refer to the containment evacuation steps.

440.654 Step 5b, Page 3 of 12: If the RCS hot leg level can not be established, what is the alternate action?

440.655 Step 8c, Page 4 of 12: Confirm that step 11 is correct.

440.656 Step 10a, Page 5 of 12: Change the RNO step from a.3) to a.2).

440.657 The background for step 11 describes core boiling and release of steam and/or gases to the containment through vents in the RCS. Since containment steaming is possible during shutdown conditions, why is only containment radiation included in the Shutdown Safety Status Tree? Why are not containment temperature and containment pressure included?

SDG-5 RESPONSE TO RCS COLD OVERPRESSURE DURING SHUTDOWN

440.658 Steps 3, 4 and 5, page 2 of 3: The action statement "Determine cause of RCS pressurization" does not seem sufficient. Westinghouse should provide additional guidance for the operator to find the cause of RCS pressurization and specify additional corrective actions.