

52-003



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 23, 1996

Mr. Nicholas J. Liparulo, Manager
Nuclear Safety and Regulatory Activities
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
P.O. Box 355
Pittsburgh, Pennsylvania 15230

SUBJECT: FOLLOWON QUESTIONS RELATED TO SPENT FUEL POOL IN THE AP600 STANDARD SAFETY ANALYSIS REPORT (SSAR)

Dear Mr. Liparulo:

To support the Nuclear Regulatory Commission (NRC) Plant Systems Branch safety evaluation effort, the staff has determined it needs additional information to complete its review. A telephone conference call was held between Westinghouse and the NRC staff on September 10, 1996, to discuss these requests for additional information (RAIs).

RAI# 410.297

The staff has reviewed Table 9.1-4 in the SSAR which presents the time to saturation and height of water above the spent fuel given a station blackout and a seismic event. The staff believes that the shortest time to spent fuel pool boiling may occur during the following scenario that is not included in SSAR Table 9.1-4. The postulated scenario is: The AP600 unit undergoes a normal refueling outage where 1/3 of the core fuel assemblies are deposited into the spent fuel pool, the plant is operated at full power just long enough to allow the new core to become fully irradiated, then something happens to the AP600 plant that necessitates a full core offload. Should a station blackout or a seismic event then occur, the time to pool boiling could be shorter than the times presented in SSAR Table 9.1-4. Therefore, the staff is requesting Westinghouse to evaluate this bounding scenario and document in SSAR Table 9.1-4, the time to spent fuel pool saturation and the height of water above the fuel at 72 hours.

RAI# 410.298

In SSAR Section 9.1.3.5, Westinghouse states, "the spent fuel pool is designed such that a water level is maintained above the spent fuel assemblies for at least 72 hours following a loss of the spent fuel pool cooling system and without makeup." Based on Table 9.1-4 in the SSAR, credit is taken for water in the in-containment refueling water storage tank (IRWST) and/or refueling cavity which is assumed to be available for gravity drain to the spent fuel pool following a full core off-load and loss of spent fuel pool cooling. This action is not described in the SSAR.

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September 23, 1996

Based on a conference call with Westinghouse, the staff now understands that no operator action is needed for this gravity drain operation. Inventory from the refueling cavity/IRWST automatically gravity drains into the spent fuel pool via the fuel transfer tube and fuel transfer gate. This operation requires that the fuel transfer tube isolation valve and the fuel transfer gate remain open following a total core offload. Given this information, the staff requests that:

- a. Westinghouse clearly describe in the SSAR how the gravity drain process works following a loss of spent fuel pool cooling given a total core offload. This description needs to include when the fuel transfer tube isolation valve and the fuel transfer gate are opened and how the status of these components will be controlled following a total core offload (i.e. Technical Specifications).
- b. Westinghouse clarify in the SSAR that the spent fuel pool level instrumentation is safety related.

You have requested that portions of the information submitted in the June 1992 application for design certification be exempt from mandatory public disclosure. While the staff has not completed its review of your request in accordance with the requirements of 10 CFR 2.790, that portion of the submitted information is being withheld from public disclosure pending the staff's final determination. The staff concludes that these followon questions do not contain those portions of the information for which exemption is sought. However, the staff will withhold this letter from public disclosure for 30 calendar days from the date of this letter to allow Westinghouse the opportunity to verify the staff's conclusions. If, after that time, you do not request that all or portions of the information in the attachments be withheld from public disclosure in accordance with 10 CFR 2.790, this letter will be placed in the NRC Public Document Room.

These followon questions affect nine or fewer respondents, and therefore are not subject to review by the Office of Management and Budget under P.L. 96-511.

If you have any questions regarding this matter, you can contact me at (301) 415-8548.

Sincerely,

original signed by:

Diane T. Jackson, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket No. 52-003

cc: See next page

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Docket No. 52-003
AP600

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