

October 3, 1997

Mr. Nicholas J. Liparulo, Manager
Nuclear Safety and Regulatory Analysis
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION (RAIs) RELATED TO AP600 TECHNICAL SPECIFICATIONS (TS) ON MAIN STEAM ISOLATION VALVES

Dear Mr. Liparulo:

Westinghouse provided a revision to the Main Steam Isolation Valve TS (LCO 3.7.2) in revision 16 of the AP600 standard safety analysis report. The background for the TS changes is provided in Westinghouse letter NSD-NRC-97-5249 dated August 29, 1997. The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the information in the Westinghouse letter together with the associated changes to TS 3.7.2 and has some additional questions. The RAIs are enclosed with this letter.

If you have any questions regarding this matter, you may 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/enclo: See next page

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Westinghouse Electric Corporation

Docket No. 52-003
AP600

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RAIs RELATED TO AP600 TECHNICAL SPECIFICATION ON

MAIN STEAM ISOLATION VALVES (LCO 3.7.2) AND

WESTINGHOUSE LETTER NSD-NRC-97-5249 DATED AUGUST 29, 1997

440.731 In LCO 3.7.2, the A.1 Action Completion time of 72 hours for restoration of an inoperable MSIV or backup valves is not acceptable. The MSIV restoration completion time is inconsistent with the STS completion time of 8 hours. It may be acceptable to have the completion times of 8 hours and 72 hours, respectively, for restoration of an inoperable MSIV and backup valves, provided that sufficient justification can be provided. Please correct this inconsistency.

440.732 SSAR Table 15.0-4b shows the steam line isolation valve closure delay time assumed in safety analysis to be 5 seconds. Technical specification surveillance requirements SR 3.7.2.1 and SR 3.7.2.2, specify the closure times of 5 seconds for the MSIVs and 10 seconds for the backup valves. The following inconsistencies related to the valve closures times have been noted:

- a. The Background on SR 3.7.2.2 states that "because the MSIV closure time is assumed for steam flow isolation in the accident and containment analyses, the alternate downstream valves must meet the MSIV closure time." Based on this statement, the backup valves should have closure times of 5 seconds.
- b. A closure time of 10 seconds is indicated for the main steam to auxiliary steam header valve and the moisture separator reheat supply steam control valve listed in SSAR 10.3.2-4. This does not appear to be consistent with the accident analyses closure time of 5 seconds.
- c. SSAR Table 15.0-4b states that the "Steamline isolation valve closure" delay time is 5 seconds. It is not clear if this applies to the MSIVs only or if the backup valves were also assumed to close within 5 seconds. If different closure time is used in the safety analyses for the backup valves, it should be included in Table 15.0-4b.

Westinghouse is requested to correct these inconsistencies.

440.733 AP600 SSAR Chapter 15 does not specifically identify which "main steam branch isolation valves" are credited in the safety analyses. SSAR Table 15.0-8 cites the MSIV backup valves, but does not identify what valves these are. Table 15.0-8 should be revised to identify the specific main steam branch isolation valves credited in the accident analysis.

Enclosure

440.734 SSAR Table 6.2.3-1, Containment Mechanical Penetration and Isolation Valves, identified the following main steam valves as the containment isolation valves: PORV block valves (SGS-PL-V027A,B), safety relief valves (SGS-PL-V030, 031, 032A,B), MSIV bypass valves (SGS-PL-0240A,B), steamline condensate drain isolation valves (SGS-PL-V036A,B), in addition to the MSIVs (SGS-PL-V040A,B). Because these main steam valves are containment isolation valves, they are required to be operable during MODES 1 through 4 operation per TS LCO 3.6.3, and are subject to surveillance requirements. SR 3.6.3.4 and SR 3.6.3.5, respectively, require verification of the isolation times of these CIVs within the closure time limits specified in SSAR Section 6.2.3. However, the PORV block valves and the condensate drain valve isolation times in SSAR Table 6.2.3-1 are shown as "industry standard". What are the required closure times for these valves, and are the closure times consistent with the safety analysis assumption? These closure times should be in the SSAR.