

December 5, 2000

Mr. Henry A. Sepp, Manager
Regulatory and Licensing Engineering
Nuclear Services Division
Westinghouse Electric Corporation
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355

SUBJECT: "METHODOLOGY FOR INCORPORATING HOT LEG NOZZLE GAPS INTO BASH," WCAP-14404 (TAC NO. M93299)

- References:
1. Letter from N. J. Liparulo, W (NTD-NRC-95-4477) to USNRC, "Transmittal of Topical Reports WCAP-14404-P and WCAP-1405-NP, 'Methodology for Incorporating Hot Leg Nozzle Gaps into BASH'," July 26, 1995.
 2. WCAP-14404, "Methodology for Incorporating Hot Leg Nozzle Gaps into BASH," August 1995.
 3. NRC Memorandum from Peter Wen to Francis Akstulewicz, "Summary of February 22, 1999, Meeting with Westinghouse Regarding Hot Leg Nozzle Gap Application in BASH," March 5, 1999.
 4. Letter from H. A. Sepp, W (NSBU-NRC-00-5962), to USNRC, "Response to Request for Additional Information for the Westinghouse Topical Report, WCAP-14404-P, 'Methodology for Incorporating Hot Leg Nozzle Gaps into BASH,' dated August 1995," February 7, 2000.
 5. Letter from H. A. Sepp, W (NSBU-NRC-00-5963), to USNRC, "Response to Request for Additional Information (RAI's 14 through 16) for the Westinghouse Topical Report, WCAP-14404-P, 'Methodology for Incorporating Hot Leg Nozzle Gaps into BASH,' dated August 1995," February 7, 2000.
 6. Letter from H. A. Sepp, W (NSBU-NRC-00-5974), to USNRC, "Response to Request for Additional Information Pursuant to June 28, 2000 Meeting Regarding WCAP-14404-P," July 17, 2000.
 7. Letter from NRC to H. A. Sepp, W, "Potential Non-Conservative Modeling In Approved Evaluation Models," November 2, 2000.

Dear Mr. Sepp:

You requested approval of a change in the Westinghouse (W) Appendix K evaluation model (EM) to include a hot leg nozzle gap model in a letter dated July 26, 1995, (Reference 1) and

the transmitted WCAP-14404 (Reference 2), as supplemented by References 3 - 6. This requested change would introduce a fluid flow path from the upper plenum to the downcomer into the previously approved W Appendix K EM. Including this path would enhance steam flow from the upper plenum, thus reducing backpressure above the core during reflood and increasing reflood rate. Modeling this path in any EM would reduce conservatism during reflood.

The currently approved (W) Appendix K EM is used to demonstrate compliance with 10 CFR 50.46(a)(1)(ii), a regulation that was written in the 1970s. The authors of this regulation recognized potential shortcomings in modeling capability and included compensatory conservatisms to reasonably bound credible nuclear power plant loss-of-coolant accidents. The regulation was subjected to extensive evaluation and review when it was implemented in 1974.

Appendix K describes certain requirements for an EM but NRC provided little additional guidance addressing how to construct EMs. As a consequence, certain aspects of initial EMs that were not specified or fully defined by Appendix K were constructed using applicable data and applicant engineering judgment in conjunction with NRC feedback to achieve an acceptable EM. This iterative process resulted in the use of additional assumptions that, through further evaluations, reviews, and practice, have become components of acceptable Appendix K EMs.

The NRC has been cautious in approving changes to Appendix K models that reduce known conservatisms because removal or modification of selected Appendix K conservatisms may upset the overall balance between non-conservatisms and conservatisms. Consequently, we believe that proposed changes should be subjected to a complete evaluation and review to ensure the bounding objective of Appendix K is still realized.

Based on the above, we do not believe it is prudent to permit removal of any Appendix K conservatism absent a better understanding of the potential nonconservatisms in the existing EMs as described in our letter to you dated November 2, 2000 (Reference 7). Consequently, we find we cannot complete the hot leg nozzle gap review at this time and the review will not proceed until all matters related to nonconservatisms with the existing EMs, are resolved.

Sincerely,

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 700

cc: See next page

Mr. Henry A. Sepp

- 3 -

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cc:

Mr. Andrew Drake, Project Manager
Westinghouse Owners Group
Westinghouse Electric Corporation
Mail Stop ECE 5-16
P.O. Box 355
Pittsburgh, PA 15230-0355

Mr. Jack Bastin, Director
Regulatory Affairs
Westinghouse Electric Corporation
11921 Rockville Pike
Suite 107
Rockville, MD 20852

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