

July 11, 2001

Mr. H. A. Sepp, Manager
Regulatory and Licensing Engineering
Westinghouse Electric Company
P.O. Box 355
Pittsburgh, PA 15230-0355

SUBJECT: THERMAL BARRIER HEAT EXCHANGER DESIGN AND OPERATING
EXPERIENCE

Dear Mr. Sepp:

Several communications have identified potential problems if a reactor coolant pump thermal barrier heat exchanger should fail and allow reactor coolant system water to flow into the component cooling water system.¹ Recently, as we identified in telephone calls with John Crane and Eric Colvin on June 14 and June 18, 2001, respectively, NRC Regional staff members have raised questions concerning isolation valves on component cooling water piping penetrating the containment pressure boundary. Specifically, their concerns involve (1) the impact of a reactor coolant pump thermal barrier heat exchanger rupture on the component cooling water system if the rupture cannot be isolated, and (2) the need for defense-in-depth to achieve isolation. To better address the potential concerns and problems, we are qualitatively assessing the potential for the accident to occur as part of a risk-informed approach. To accomplish this, we need a better understanding of the design and operating experience. This letter supplements the referenced telephone calls where we asked if Westinghouse could help by providing (1) design and operating experience information, and (2) any insights or other information to assist in our assessment.

We would be especially interested in your views about:

1. Heat exchanger tubing or tubing "header" rupture that pressurizes the component cooling water system.
2. Seal failure that allows reactor coolant system water to flow past the thermal barrier heat exchanger at a high flow rate and the possibility of heat exchanger damage.
3. A complication from item 1. above in which hot reactor coolant system water reaches the reactor coolant pump seals with a potential seal failure in addition to pressurization of the component cooling water system.

We believe the information below will be useful in providing insights into the operation and design of the system:

¹See, for example, NRC Information Notice 97-31 and the July 1984 Westinghouse Part 21 notification to NRC.

H. A. Sepp

-2-

1. Thermal barrier heat exchanger design drawings and descriptions,
2. Operational information such as Westinghouse recommendations, maintenance inspection practices, degradation experience and response, and replacement data, and
3. Examination of readily available hardware.

As we discussed, our goal is best achieved by a visit to your facilities where we could visit with Westinghouse personnel and look at documentation and hardware. We appreciate any assistance you can provide to achieve this goal. If you have any questions, please contact me at 301-415-1313.

Sincerely,

/RA/

Steven D. Bloom, Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 700

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

H. A. Sepp

- 2 -

1. Thermal barrier heat exchanger design drawings and descriptions,
2. Operational information such as Westinghouse recommendations, maintenance inspection practices, degradation experience and response, and replacement data, and
3. Examination of readily available hardware.

As we discussed, our goal is best achieved by a visit to your facilities where we could visit with Westinghouse personnel and look at documentation and hardware. We appreciate any assistance you can provide to achieve this goal. If you have any questions, please contact me at 301-415-1313.

Sincerely,

/RA/

Steven D. Bloom, Project Manager, Section 2
 Project Directorate I
 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

Project No. 700

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

DISTRIBUTION:

PUBLIC
 PDIV-2 R/F
 RidsNrrPMSBloom
 RidsNrrLAEPeyton
 RidsNrrDlpmLpdiv (SRichards)
 RidsOgcMailCenter
 RidsAcrcAcnwMailCenter
 JWermiel

ACCESSION NO.: ML011780642

OFFICE	PDI-2/PM	PDIV-2/LA	PDIV-2/SC
NAME	SBloom:am	EPeyton	SDembek
DATE	7/11/01	7/3/01	7/11/01

OFFICIAL RECORD COPY