June 23, 1998

Mr. M. L. Marchi
Site Vice President - Kewaunee Plant
Wisconsin Public Service Corporation
P.O. Box 19002
Green Bay, WI 54307-9002

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - REQUEST FOR ADDITIONAL INFORMATION REGARDING THE REVIEW OF PROPOSED AMENDMENT REGARDING F* AND EF* CRITERIA FOR STEAM GENERATOR TUBES (TAC NO. MA1977)

Dear Mr. Marchi:

By application dated June 1, 1998, Wisconsin Public Service Corporation (WPSC) submitted for staff review a proposed amendment (PA156) to revise the F* and EF* criteria for steam generator (SG) tubes in the Kewaunee Technical Specifications (TS). The proposed amendment would revise the existing F* distance and EF* distance in TS 4.2.b to reflect the changes to the primary to secondary differential pressure due to SG tube plugging and sleeving and a minor error made in the original calculations. In order to continue its review, the staff requests that WPSC respond to the attached questions.

If you have any questions regarding this request, please contact me at (301) 415-3026.

Sincerely,

Original signed by:

William O. Long, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosure: As stated

cc w/encl: See next page

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NAME	WLong		EBarnhill				RBellamy	
DATE	6/15/98		6/19/98		/ /98		6/24/98	

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

June 23, 1998

Mr. M. L. Marchi
Site Vice President - Kewaunee Plant
Wisconsin Public Service Corporation
P.O. Box 19002
Green Bay, WI 54307-9002

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - REQUEST FOR ADDITIONAL INFORMATION REGARDING THE REVIEW OF PROPOSED AMENDMENT REGARDING F* AND EF* CRITERIA FOR STEAM GENERATOR TUBES (TAC NO. MA1977)

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Sincerely,

William O. Long

William O. Long, Sr. Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosure: As stated

cc w/encl: See next page

cc:

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Kewaunee County Board
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Kewaunee, WI 54216

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Kewaunee, WI 54216-9511

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Lisle, IL 60532-4531

James D. Loock, Chief Engineer
Public Service Commission
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P. O. Box 7854
Madison, WI 53707-7854

REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED AMENDMENT
ON F* AND EF* CRITERIA FOR
STEAM GENERATOR TUBING
AT KEWAUNEE NUCLEAR POWER PLANT
DOCKET NO. 50-305

By application dated June 1, 1998, Wisconsin Public Service Corporation (WPSC) submitted for staff review a proposed amendment to revise existing F* and EF* criteria for steam generator (SG) tubes in the Kewaunee technical specifications (TS). The proposed amendment would revise the existing F* distance and EF* distance in TS 4.2.b to reflect the changes to the primary to secondary differential pressure due to SG tube plugging and sleeving and a minor error made in the original calculations. In order to continue its review, the staff requests that WPSC respond to the following questions:

1. Discuss the differences between the original analysis and revised analysis in which the primary to secondary differential pressure was increased from 1565 psi to 1600 psi; e.g., what were the assumptions applied to the SG tubing in the revised analysis that were different from the original analysis?

2. Confirm that F* and EF* distances, including nondestructive examination (NDE) uncertainty of 0.20 inches, will be 1.31 inches and 1.71 inches, respectively. Confirm that the F* and EF* criteria will not be applied to any non-sleeved hardroll whose length is less than F* and EF* distances of 1.31 inches and 1.71 inches, respectively. Discuss the changes, if any, to the eddy current technique (e.g., probe design) to reflect the proposed changes to the distances. Discuss in detail how the NDE uncertainty of 0.20 inches was derived.

3. TS 4.2.b.6.b specifies that the EF* region is located a minimum of 4 inches below the top of the tubesheet. Discuss the technical basis of the 4-inch distance.

4. In the footnote on Page 2-1 of WCAP-14677, Revision 1, "F* and Elevated F* Tube Alternate Repair Criteria For Tubes With Degradation In The Tubesheet Region Of The Kewaunee Steam Generators," an attachment to the June 1, 1998, application, it is stated that based on NDE, the factory hardrolls in the hot leg tubesheet of SG A in Kewaunee range from about zero to about 2.25 inches in axial length. It is also stated that the typical length is 1.25 inches. The staff understands that the licensee has repaired the undersized, non-sleeved, factory hardrolls by installing additional roll expansion joints directly above the factory hardrolls. However, it is not clear that the average length of the existing non-sleeved hardrolls is 1.25 inches. Provide the average length of the existing non-sleeved hardrolls. Provide the number of the non-sleeved hardrolls that have length shorter than the F* distance of 1.31 inches and assess their structural and leakage integrity.

5 On page 3 of Attachment 1 to the June 1, 1998, letter, it is stated that Westinghouse corrected a minor error in the original calculation of F* and EF* distance. Discuss the error in detail: (1) Discuss whether the error affects F* and EF* criteria in existing technical specifications in plants other than Kewaunee; (2) Discuss whether Westinghouse

investigated the error under 10 Code of Federal Regulation Part 21, "Reporting of Defects and Noncompliance." (3) By removing the error, the F* distance would decrease from 1.12 inches to 1.10 inches and the EF* distance would increase from 1.44 inches to 1.49 inches. Why did the error cause an increase in one case and a decrease in another case?

6. Discuss whether the revised F* and EF* distances, which were calculated by theory, can be supported by the tensile test results in WCAP-14679, "Qualification of Additional Roll Expansion for the Kewaunee Nuclear Power Plant Steam Generators," which was submitted on July 3, 1996, as a part of license amendment 129.