Wisconsin Electric
POWER COMPANY

231 W Michigan, PO Box 2046, Milwaukee, WI 53201-2046 (414) 221-2345

VPNPD-95-078

October 6, 1995

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301
REQUEST FOR ADDITIONAL INFORMATION REGARDING GENERIC LETTER 95-03, CIRCUMFERENTIAL CRACKING OF STEAM GENERATOR TUBES
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On April 28, 1995, the U.S. Nuclear Regulatory Commission issued Generic Letter (GL) 95-03, "Circumferential Cracking of Steam Generator Tubes." Our response to GL 95-03 was submitted to the NRC on June 26, 1995 for Point Beach Nuclear Plant, Units 1 and 2.

In a letter from your office dated September 1, 1995, you sent a Request for Additional Information (RAI) to obtain additional information and/or clarification needed by the staff to complete its review of our submittal.

Subsequent to sending the RAI, the staff identified an additional area where further clarification was needed. The enclosure to your letter dated September 22, 1995, contained the request for the new information needed to complete the review of our response to GL 95-03.

This letter forwards our response to those questions.

If you require additional information, please contact us.

Sincerely,

Bob Link
Vice President
Nuclear Power

170084

KVA/jg

Attachment

cc: NRC Regional Administrator, Region III
NRC Resident Inspector

A001

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE GENERIC LETTER 95-03 RESPONSE FOR POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 DOCKET NOS. 50-266 AND 50-301

Question 1:

The following areas have been identified as being susceptible to circumferential cracking:

a. Expansion transition circumferential cracking
b. Small radius U-bend circumferential cracking
c. Dented location (including dented TSP) circumferential cracking
d. Sleeve joint circumferential cracking

In your response, areas b and c were not specifically addressed for Unit 2. Please submit the information requested in GL 95-03 per the guidance contained in the GL for this area (and any other area susceptible to circumferential cracking). The staff realizes that some of the above areas may not have been addressed since they may not be applicable to your plant; however, the staff requests that you clarify this (e.g., no sleeves are installed; therefore, the plant is not susceptible to sleeve joint circumferential cracking).

For Unit 1, it was indicated that the past inspection scope was consistent with the normal industry accepted practice and that the next inspection will follow the Electric Power Research Institute (EPRI) recommended practices. Please clarify this response. This response should address areas a, b, c, and d.

Response:

Unit 2

Inspections of the Point Beach Nuclear Plant (PBNP) Unit 2 steam generators have not revealed any indication of circumferential cracking at the U-bends of small radius tubes or at dented locations. Past inspection programs to address this area have consisted of bobbin coil examinations using a zero-voltage threshold for acceptance, with follow-up rotating coil examinations of any distorted indications. This type of inspection program will be used for the Unit 2 outage referenced in our response to GL 95-03.

Unit 1

The PBNP Unit 1 steam generators have thermally treated Inconel 600 tubing. Industry experience has shown that thermally treated Inconel 600 tubing has not been susceptible to circumferential cracking at any locations. This includes expansion transitions, small radius U-bends, and dented locations. There are no sleeves installed in the PBNP Unit 1 steam generators.

Past inspection programs have consisted of bobbin coil examinations using a zero-voltage threshold for acceptance, with follow-up rotating coil examinations of any distorted indications. These examinations have found and accurately dispositioned several hundred manufacturing buff mark (MBM) indications.

For the next Unit 1 outage, scheduled for the Spring of 1996, we plan to use the bobbin coil with a zero-voltage threshold for acceptance, with follow-up by a Plus-Point probe for any distorted indications.

Question 2:

It was stated that a 100% inspection of the unsleeved tubesheet hot leg crevice region was performed at Unit 2 and no circumferential indications were detected. Clarify the technique that was used for these inspections.

Response:

The technique used for the 100% inspection of the unsleeved tubesheet hot leg crevice region at Unit 2 was a bobbin coil with a zero-voltage threshold, followed by a rotating coil examination of all distorted indications.

Question 3:

The inspection plan for Unit 2 involves primarily a bobbin coil examination with follow-up rotating pancake coil examinations. Since the bobbin coil is relatively insensitive to circumferential indications, provide your basis for these inspections given that circumferential indications have been detected at plants with similar expansions.

Response:

Subsequent to submitting our response to GL 95-03, we changed the inspection plan for the Unit 2 outage referenced in our response. The inspection program for unsleeved tubes, and the unsleeved portion of sleeved tubes, will consist of a bobbin coil with a zero-voltage threshold as before, but follow-up of distorted indications will be

performed by a Plus-Point probe instead of a rotating pancake coil as we originally stated in our response. Inspections of sleeved tubes will be performed using a very discriminating probe such as the Plus-Point or CECCO-5 as stated in our original reponse.

Question 4:

As a result of discovering circumferentially oriented degradation at the top of the tubesheet, other plants with partial depth roll expansions perform inspections with techniques capable of detecting circumferentially oriented degradation in this region. If this area is susceptible to circumferential cracking, please provide the information requested in GL 95-03 (e.g., past inspection scope and results).

Response:

Inspections of the Unit 2 steam generator tubes have not revealed any signs of circumferential cracking at the top of the tubesheet. We believe this is due, in part, to the low operating temperature for Unit 2. Rotating coil inspections of this region have been performed at an approximate rate of 3% per year based on distorted indication findings.

Question 5:

During the Maine Yankee outage in July/August 1994, several weaknesses were identified in their eddy current program as detailed in NRC Information Notice 94-88, "Inservice Inspection Deficiencies Result in Severely Degraded Steam Generator Tubes." In IN 94-88, the staff observed that several circumferential indications could be traced back to earlier inspections when the data was reanalyzed using terrain plots. These terrain plots had not been generated as part of the original field analysis for these tubes. For the rotating pancake coil (RPC) examinations performed at your plant at locations susceptible to circumferential cracking during the previous inspection (i.e., previous inspection per our Generic Letter 95-03 response), discuss the extent to which terrain plots were used to analyze the eddy current data. If terrain plots were not routinely used at locations susceptible to circumferential cracking, discuss whether or not the RPC eddy current data has been reanalyzed using terrain mapping of the data. If terrain plots were not routinely used during the outage and your data has not been reanalyzed with terrain mapping of the data, discuss your basis for not reanalyzing your previous RPC data in light of the findings at Maine Yankee.

Discuss whether terrain plots will be used to analyze the RPC eddy current data at locations susceptible to circumferential cracking during your next steam generator

tube inspection (i.e., the next inspection per your Generic Letter 95-03 response).

Response:

Point Beach has always generated and used terrain plots for all rotating coil examinations performed on both units.

Terrain plots will be generated and used to analyze the rotating coil examinations during the Unit 1 and Unit 2 outages referenced in our response to GL 95-03.

KVA