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VPNPD- 91-164 NRC- 91-047

10 CFR 50.73

May 17, 1991

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

Gentlemen:

DOCKET 50-266 LICENSEE EVENT REPORT 90-002-00 DEGRADATION OF STEAM GENERATOR TUBES POINT BEACH NUCLEAR PLANT, UNIT 1

Enclosed is Licensee Event Report 90-002-00 for Point Beach Nuclear Plant, Unit 1.

This report is provided in accordance with Technical Specification 15.4.2.A.7(a), "After each inservice examination, the number of tubes plugged or repaired in each steam generator shall be reported to the Commission as soon as practical" and 15.4.2.A.7(c), "Reports required by Table 15.4.2-1, 'Steam Generator Tube Inspection,' shall provide the information required by Technical Specification 15.4.2.A.7(b) and a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence." LER 90-002-00 is filed according to the above table under the reporting requirement of 10 CRF 50.73(a) (2) (ii).

If any further information is required, please contact us.

Very truly yours,

who for C.W. Fay duard C. W. Fay

Vice President Nuclear Power

Enclosure

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Copies to NRC Regional Administrator, Region III NRC Resident Inspector

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ABSTRACT

Unit 1 was shut down for Refueling 18 on April 6, 1991. Eddy current examination of the steam generator tubes began on April 13, 1991 and was completed on April 18, 1991 using the digital multi-frequency eddy current system. Inspection results in the 'A' steam generator hot leg showed one tube degraded ≥40%. This tube was then plugged.

In the 'B' steam generator, one tube showed indications up to 38% degradation. This tube was plugged as a preventative measure.

Inspections of each steam generator tube bundle were performed using remote video equipment. The condition of the tubes at all inspected locations was very good. Boiler scale was detected throughout the steam generators (as was expected) and a sample was removed for examination. NRC FORM 366A

US NUCLEAR REQUILATORY COMMISSION

APPROVED OME NO. 3150-0104 EXPIRES 4/30/92

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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EVENT DESCRIPTION

Remote Video Inspection Scope

Steam generator tube bundle inspections were performed during this outage. Remote video equipment was directed through the second tube support plate regions of each steam generator. In addition, this inspection also encompassed the annular region, the tube lanes, the baffle plates, and a few tubes into the bundle. In the 'A' steam generator, the inspection port at the 6th support plate was also removed to allow access for inspection. The condition at all of the inspected locations was found to be very good. A sample of boiler scale found throughout the steam generators was removed for analysis to determine a method for removal and also to attempt to quantify its thermal properties in an effort to explain a steam side pressure loss phenomenon in Unit 2.

Pressure Tests

The ten year hydrostatic pressure test required by ASME XI was conducted at 1356 psig during the 1991 outage. No signs of leakage or distress were observed.

Eddy Current Inspection Scope

Full length eddy current testing was initially performed on 20% of the tubes in each steam generator including low rows (S Row 3). In addition, the peripheral tubes in both steam generators were examined to the first support plate to address loose parts concerns. A defective tube in the 'A' steam generator necessitated additional inspections of 1284 tubes in that generator. A total of 2252 inspections (70%) in the 'A' steam gene. Ator were performed. Rotating Pancake Coil (RPC) tests were also performed on specific indications found during previous examinations.

The number of tubes inspected and the extent of the inspections are as follows:

U.S. NUCLSAR REQULATORY COMMISSION

APPROVED OMB ND. 3150-0104 EXPIRES 4/30/02

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'A' Steam Generator

Extent of Inspection	Number of From Hot Leg	Tubes From Cold Leg
Full length #1 TSP #6 TS RPC al	576 127 1350 <u>5</u> 2058	127 66 <u>1</u> 194

'B' Steam Generator

Extent of Inspection	Number o From Hot Leg	From
Full Length #1 TSP #6 TSP RPC Total	584 148 60 <u>1</u> 793	148 60 5 213

'A' Steam Generator Tube Plugging

On April 19, 1991, review and verification of all eddy current data for tubes with reportable indications was completed. One tube in the 'A' steam generator was found with degradation 240% (Technical Specification Limit 15.4.2.A.5) and was plugged. This tube was located at R21C63 and had a 68% and a 66% indication .6 inches below the fifth tube support plate on the hot leg side.

'B' Steam Generator Tube Plugging

In the 'B' steam generator, one tube had indications approaching 40% degradation (Technical Specification Limit 15.4.2.A.5) and was plugged as a preventative measure. This tube, located at R30C60, had indications of 38%, 32% and 18% at anti-vibration bars, 1, 2, and 3, respectively.

NRC FORM 366A (6-68)

LICENSEE EVENT REPO		APPROVED OME NO. 5160-0104 EXPIRES 4/30/92 ESTIMATED BURDEN FER REBPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 60.0 HRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F530) U.S. NUCLEAR REGULATORY COMMISSION WARHINGTON DC 20655 AND TO THE PARERWORK REQUEITION PROJECT (ISO/0104) OFFICE OF MANAGEMENT AND BUDGET WASHINGTON DC 20603					
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Sludge Lancing

Sludge lancing was performed on both steam generators. A total of 109 pounds of sludge was removed from both steam generators. Post-cleaning examination verified the effectiveness of the cleaning.

Preventative Maintenance

Wisconsin Electric continues to monitor tube integrity in each steam generator and plug those tubes which exceed or approach the plugging limit in the Technical Specifications.