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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 CFR 50.73(a) (2) (ii).

If any further information is required, please contact us.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'Edward J. [unclear] for C.W. Fay'.

C. W. Fay  
Vice President  
Nuclear Power

Enclosure

Copies to NRC Regional Administrator, Region III  
NRC Resident Inspector

9105280190 910517  
PDR ADOCK 05000266  
S PDR

A subsidiary of Wisconsin Energy Corporation

Handwritten initials 'FE' and the number '11' below them.

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20546 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)		DOCKET NUMBER (2)		PAGE (3)	
Point Beach Nuclear Plant		0 5 0 0 0 2 6 6		1 OF 4	

TITLE (4)  
Degradation of Steam Generator Tubes

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
04	19	91	91	002	000	05	17	91			0 5 0 0 0
<input type="checkbox"/> YES (1) <input checked="" type="checkbox"/> NO (2)											

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 2. (Check one or more of the following) (11)										
POWER LEVEL (10)	20.402(k)	20.406(l)	50.734(i)(1)(i)	73.71(m)							
0 0 0	20.406(l)(1)(i)	50.38(j)(1)	50.734(i)(2)(i)	73.71(n)							
	20.406(l)(1)(ii)	50.38(j)(2)	50.734(i)(2)(ii)	OTHER (Specify in Abstract)							
	20.406(l)(1)(iii)	50.734(i)(1)(i)	50.734(i)(2)(iii)	Base and - Tar VRC Form 366A							
	20.406(l)(1)(iv)	50.734(i)(1)(ii)	50.734(i)(2)(iv)								
	20.406(l)(1)(v)	50.734(i)(1)(iii)	50.734(i)(2)(v)								

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
C. W. Fay, Vice President, Nuclear Power	4 1 4 2 2 1 - 2 8 1 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	A	B	S	G	W	1	2	0	Y

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (1) <input checked="" type="checkbox"/> NO (2)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

**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  $\geq 40\%$ . 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.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-830), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (if more space is required, use additional NRC Form 366A's) (17)

EVENT DESCRIPTIONRemote 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 (≤ 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 generator and 1006 inspections (31%) in the 'B' steam generator 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:

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 365A (1/77))

'A' Steam Generator

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

'B' Steam Generator

Extent of Inspection	Number of Tubes	
	From Hot Leg	From Cold Leg
Full Length	584	
#1 TSP	148	148
#6 TSP	60	60
RPC	<u>1</u>	<u>5</u>
Total	793	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 ≥40% (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.

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TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST, 60.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

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.