



Wisconsin Electric POWER COMPANY
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50-266

December 18, 1980

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. Robert A. Clark, Chief
Operating Reactor Branch #3

Gentlemen:

DOCKET NO. 50-266
RESULTS OF STEAM GENERATOR INSPECTION
POINT BEACH NUCLEAR PLANT UNIT 1

As discussed in our letters dated August 5 and August 22, 1980, hydrostatic testing and inspection of the steam generator tubes at Point Beach Nuclear Plant Unit 1 were conducted during the present refueling outage. This letter provides the results of these tests and inspections.

The hydrostatic leak checks of the Unit 1 steam generators were successfully completed on December 9, 1980. A detailed inspection of the tubesheets during the secondary-to-primary hydrostatic leak check showed no evidence of any leakage from the steam generator tubes. Although two previously plugged tubes in the A steam generator and two previously plugged tubes in the B steam generator were observed to have "wet" tube plug ends, no dripping tube ends were observed.

The eddy current inspection program consisted of examination of 100 percent of the tubes through the first support plate on the hot leg side. Greater than three percent of the tubes, including all previously degraded tubes on the cold leg side, were inspected over their entire length. A list of all eddy current indications found in the hot legs of the A and B steam generators is provided as an attachment to this letter. Three tubes in the A steam generator and five tubes in the B steam generator were identified as having crevice defects which exceeded the 40 percent tube plugging limit of Technical Specifications 15.4.2.A.5. These tubes have been taken out of service with mechanical plugs. The attachment provides a comparison of the eddy current signals observed during this inspection with those signals recorded during the past three inspections. Continued refinement of the eddy current interpretation

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techniques, including use of a mixed 200KHZ signal on a 100KHZ signal during this inspection, have permitted the identification of extremely small volume defects which were present in previous inspections but could not be identified because of interference and noise. We also have listed five tubes in the A steam generator and two tubes in the B steam generator which had very small volume but otherwise undefinable indications. These indications cannot be quantified as a tube defect but have been recorded as an abnormal signal. The two tubes in the B steam generator with the abnormal signals have been plugged. The five tubes in the A steam generator have been left unplugged as potential candidates for a sleeving demonstration program.

As discussed in our August 5, 1980 letter, two tubes in the A steam generator, R10C54 and R33C54, had been identified with 34 percent, small volume indications at or slightly above the tubesheet. Since these indications did not exceed the tube plugging criteria and the indications had remained essentially unchanged since at least the October 1979 inspection, these tubes were not plugged. We had committed to specifically re-examine these tubes during this outage. The results are provided as part of the attachment. We interpret these results as confirmation that the indication in these tubes are essentially unchanged. A similar tube R27C30 was identified in steam generator B during this inspection. This indication was present in a previous inspection and has also remained essentially unchanged. No indications within the cold leg tube sheet region were observed and only one 28% indication was observed above the tubesheet on the cold leg side.

Based on the results of this inspection and inspections conducted in July and March 1980, it appears that the rate of corrosion of the steam generator tubes in the tube sheet crevice region has been substantially reduced. The results of these inspections indicate that the condition of the steam generators has not changed significantly since the March 1980 inspections. It is our intention to return Point Beach Unit 1 to service, and to operate for a period of up to 150 effective full power days (EFPD) subject to the following conditions.

1. Primary system pressure will be maintained at a nominal 2000 psia in accordance with the Technical Specifications.
2. Primary coolant activity will be limited in accordance with the provisions of Sections 3.4.8 and 4.4.8 of the Standardized Technical Specifications for Westinghouse PWRs, Revision 2, July 1979, which is more restrictive than the Point Beach Technical Specifications.
3. Close surveillance of primary-to-secondary leakage will be continued. The reactor will be shut down on detection and confirmation of any of the following conditions:
 - a) Sudden primary-to-secondary leakage in excess of 150 gallons per day (gpd) in either steam generator.

December 18, 1980

- b) Primary-to-secondary leakage in excess of 250 gpd in either steam generator.
 - c) An upward trend in primary-to-secondary leakage in excess of 15 gpd per day, when measured primary-to-secondary leakage is above 150 gpd. Should any of the above conditions a), b), or c) occur, the leaking tube or tubes will be identified and plugged and the unit returned to operation.
4. If the primary-to-secondary leakage in either steam generator is confirmed to be in excess of 500 gpd, an eddy current examination of that steam generator will be performed in addition to repairing the leak. We will review the results of such an eddy current examination with the NRC prior to resuming operation.

As you know, we have been operating Point Beach Unit 1 since December 1979 with a reduced hot leg temperature of approximately 557°F. We have also developed and utilized a secondary side crevice "flushing" procedure which appears to have successfully removed some caustic materials from these regions. Our secondary side sludge lancing procedures have been effective in reducing the sludge piles in Unit 1 steam generators to the lowest volumes observed in recent years.

At approximately the mid-point of the next Point Beach Unit 1 operating cycle, but in no case beyond 150 EFPD, we will schedule a steam generator inspection outage. At that time we will conduct a 100% eddy current inspection to the first support of all tubes readily accessible by remote equipment. This means that about 26 tubes located under the eddy current fixture foot, which must be hand-probed, and 18 tubes which contain template plugs and require additional steam generator entries would not be probed. Thus, only 44 of the greater than 2850 open tubes would not be inspected (1.5%), unless results of the ongoing examination indicate that it would be prudent to inspect them. The tubes under the fixture foot are located in columns 44 through 48, Rows 1 through 6, and the template plugs are randomly placed. The full-length examination of 3% of the tubes would also be deleted during this examination since no indications have ever been found in the cold leg tubesheet region. A Technical Specification inspection of 3% of the tubes will be conducted under the normal inservice inspection program. This program eliminates the major radiation exposure and time-consuming items, yet provides a very extensive inspection of the problem areas of our steam generators. The results of this inspection will be reported to the NRC.

We are planning, during the next operating cycle, to conduct a demonstration program to establish the feasibility of sleeving steam generator tubes at the Point Beach Nuclear Plant. When and if this evaluation is definitely scheduled, we will provide the Commission Staff with information describing this demonstration program.

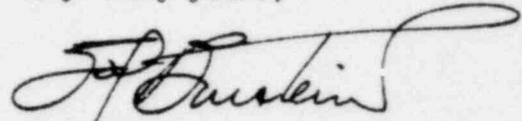
Mr. Harold R. Denton

-4-

December 18, 1980

We are presently planning on returning Point Beach Nuclear Plant Unit 1 to operation on or about January 2, 1981. We would appreciate your review and concurrence with the results of this inspection, and any comments you may have on our plans for continued operation of Unit 1, by December 31, 1980.

Very truly yours,



Executive Vice President

Sol Burstein

Copies to NRC Resident Inspector
Point Beach Nuclear Plant

Public Service Commission of Wisconsin

Wisconsin's Environmental Decade

NOVEMBER 1980

STEAM GENERATOR INSPECTION RESULTS
POINT BEACH NUCLEAR PLANT UNIT 1

TUBE IDENTIFICATION		INDICATION SIZE/LOCATION	COMPARISON TO PREVIOUS INSPECTIONS		
ROW	COLUMN		<u>AUG. 1980</u>	<u>MAR. 1980</u>	<u>DEC. 1979</u>
INLET - "A" STEAM GENERATOR					
R24C33		71%/11"ATE	SAME	NDD	NDD
R11C35		63%/13"ATE	SAME	SN	SN
R29C53		65%/11-13"ATE	SN	NDD	NDD
R11C43		UDI/18-20"ATE	SN	NDD	NDD
R25C44		UDI/13-15"ATE	NDD	NDD	NDD
R25C47		UDI/13-18"ATE	SN	SN	SN
R8C55		UDI/17"ATE	NDD	NDD	NDD
R10C54		<20%/TTS	35%	SAME	SAME
R33C54		22%/1/2"ATS	34%	NT	NT
R15C60		UDI/14-18"ATE	SN	SN	SN

OUTLET - "A" STEAM GENERATOR

R28C48		28%/1"ATS	29%	NT	NT
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INLET - "B" STEAM GENERATOR

R14C28		62%/21"ATE	SAME	SN	NDD
R19C30		UDI/20"ATE	SAME	SN	NDD
R26C37		UDI/12"ATE	NDD	NDD	NDD
R24C52		80%/5"ATE	SAME	NDD	NDD
R3C60		80%/1"ATE	SAME	SN	NDD
R20C60		87%/19"ATE	SN	NDD	NDD
R21C62		74%/20-21.5"ATE	SAME	SAME	SAME
R27C30		29%/1/2"ATS	SAME	NT	NT

ATE = Above tube end
NDD = No detectable defect
ATS = Above tube sheet
SAME = Signal observed same as Nov. 1980 signal
UDI = Undefinable indication
SN = Signal noise/cannot confirm presence or absence of an eddy current indication.
NT = Not tested
TTS = Top of tube sheet

TUBES PLUGGED DURING THIS OUTAGE

Steam Generator A - R24C33, R11C35, R29C53

Steam Generator B - R14C28, R24C52, R3C60, R20C60,
R21C62, R19C30, R26C37