

June 10, 2004

NRC 2004-0060

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Point Beach Nuclear Plant, Unit 1
Docket 50-266
License No. DPR-24

Summary Of Spring 2004 Unit 1 (U1R28) Steam Generator Examinations

In accordance with the requirements of Point Beach Nuclear Plant (PBNP) Technical Specifications 5.6.8(a) and 5.6.8(b), Nuclear Management Company, LLC (NMC), is submitting the summary of the spring 2004 Unit 1 steam generator eddy current examinations.

The attached summary describes the number and extent of tubes tested and the location and percentage of wall-thickness penetration for each indication of degradation in each steam generator.

This letter contains no new commitments and no revisions to existing commitments.



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Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
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ENCLOSURE 1
SUMMARY OF THE SPRING 2004 UNIT 1 (U1R28)
STEAM GENERATOR EXAMINATIONS

Point Beach Nuclear Plant (PBNP) Technical Specification 5.6.8(a) requires that: "After each inservice examination, the number of tubes plugged or repaired in each steam generator shall be reported to the commission as soon as practicable."

The PBNP steam generator tube inspection program is conducted in accordance with the requirements of PBNP Technical Specifications 5.5.8 and 5.6.8, NEI 97-06, "Steam Generator Program Guidelines," Revision 1, and EPRI 1003138, "PWR Steam Generator Examination Guidelines," Revision 6.

The PBNP Unit 1 steam generators are Westinghouse Model 44F with thermally treated, 7/8-inch outer diameter, Inconel 600 tubing. The tubes are hydraulically expanded to the full depth of the tubesheet. The tubes are supported by six stainless steel tube support plates with broached quatrefoil holes. The PBNP Unit 1 steam generators were replaced in 1983, during refueling outage 11. The replacement steam generators have accumulated 16.43 effective full power years of operation since then.

Inservice examination of the PBNP Unit 1 steam generator tubes performed during refueling outage 28 was completed on April 30, 2004. The scope of the inspection consisted of the following:

- Bobbin coil inspection of 100% of the active tubes over the full length of the tube. The U-bend portion of all row 1 tubes and seven row 2 tubes were not inspected using the bobbin coil due to restricted access;
- RPC Plus Point probe inspection of the row 1 U-bends and the seven row 2 U-bends that could not be tested using the bobbin coil;
- RPC Plus Point probe inspection of 77% of the top of the tubesheet hot leg expansion transitions, including all periphery tubes, two tubes deep;
- RPC Plus Point probe inspection of 312 special interest tests.

This program exceeds the requirements of the PBNP Technical Specifications, NEI, and EPRI. As a result of this examination, no steam generator tube degradation was detected that required tubes to be plugged. The plugging limit at PBNP is 40% through-wall as specified in PBNP Technical Specification 5.5.8.a.6. Tubes are also plugged upon any indication of circumferential or axial cracking.

Since the Unit 1 steam generators were replaced in 1983, tube corrosion has been minimal. There are presently a total of 10 tubes plugged in the Unit 1 steam generators – four tubes in the "A" steam generator and six tubes in the "B" steam generator. Only four of these ten tubes were plugged as a result of service-induced degradation – one tube in the "A" steam generator and three in the "B" steam generator. There are three tubes in the "A" steam generator and one tube in "B" steam generator that were plugged prior to placing the steam generators in service, plus an additional two tubes in "B"

steam generator are plugged because they were damaged during modification to the wrapper.

The analysts utilized at PBNP are qualified to Appendix G of the EPRI PWR Steam Generator Examination Guidelines. The sizing methods are qualified in accordance with Appendix H of the EPRI "PWR Steam Generator Examination Guidelines."

Rotating Pancake Coil (RPC) examinations are used to supplement bobbin coil examinations and to size indication where required/allowed by the PBNP data analysis guidelines. Specifically, RPC is used for the detection, characterization of indications and for sizing of indications.

The bobbin coil inspection detected and sized 45 Anti-Vibration Bar (AVB) wear indications in the "A" steam generator and 21 AVB wear indications in the "B" steam generator. The indications were significantly smaller than the plugging criterion of 40% through-wall. Based on the growth in depth of AVB wear indications determined by historical review, no indications are expected to exceed the plugging criterion during the next two cycles of operation, which is approximately three years.

The bobbin coil indications, other than AVB wear, were interrogated by RPC Plus Point probe. These inspections revealed 14 tubes in the "A" steam generator and one tube in the "B" steam generator with indications of volumetric wear near the top of tubesheet. This wear appears to be the result of transient loose parts that are no longer present or damage inflicted by contact with sludge lancing equipment. It was determined by secondary side visual inspection that no objects that could cause continuation of the wear are present. RPC Plus Point was used to size the wear at 11% through-wall or less for the indications. This depth is significantly below the plugging criterion, and since the source of the wear is no longer present, no growth is anticipated.

Volumetric wear indications were also noted in three tubes in the "A" steam generator at support plates 2 and 3 on the cold leg. These indications were conservatively sized at 18% through-wall or less. This depth is significantly below the plugging criterion, and the wear is not expected to exceed the plugging criterion within the next three years.

Possible loose parts were identified on six tubes in the "B" steam generator. No wear was detected on these tubes. After secondary side cleaning, a secondary side visual examination verified that no loose parts remained in the region of concern.

In summary, based on the inspection results, no tubes needed to be repaired, and the tube integrity and leakage criterion specified in NEI 97-06 are expected to be satisfied for the next two cycles of operation. Therefore, these tubes are acceptable for continued service for the next two operating cycles. In accordance with Point Beach Technical Specifications and EPRI Steam Generator Examination Guidelines, Revision 6, our next scheduled inspection is planned for Unit 1 refueling outage 30 in 2007.