

March 19, 2007

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNIT NO. 2 - REVIEW OF THE FALL 2005 STEAM
GENERATOR TUBE INSPECTION REPORTS (TAC NO. MD1199)

Dear Mr. Crane:

By letters to the Nuclear Regulatory Commission (NRC), dated January 3, and September 8, 2006, and January 16, 2007, you submitted information related to the steam generator tube inspections for the fall 2005, refueling outage at the Byron Station, Unit No. 2 (Byron), in accordance with the plant's technical specifications (TS).

The NRC staff has completed its review of these reports and concludes that you have provided the information required by the Byron TS, and that no additional follow-up is required at this time.

Sincerely,

/RA/

Robert F. Kuntz, Project Manager
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. STN 50-455

Enclosure:
Evaluation of Steam Generator Tube Inspection Reports

cc w/encl: See next page

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ADAMS Accession Number: ML070590534 NRR-106

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Byron Station, Units 1 and 2

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OFFICE OF NUCLEAR REACTOR REGULATION
EVALUATION OF STEAM GENERATOR INSPECTION REPORTS
FOR THE TWELFTH REFUELING OUTAGE
BYRON STATION, UNIT NO. 2
DOCKET NO. STN 50-455

By letter to the Nuclear Regulatory Commission (NRC) dated October 17, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML052920168), Exelon Generation Company, LLC (the licensee) submitted the steam generator (SG) tube plugging report in accordance with Technical Specification (TS) Section 5.6.9. By letter dated January 3, 2006 (ADAMS Accession No. ML060050335), the licensee submitted the annual SG tube inspection report in accordance with TS Section 5.6.9. A letter dated March 22, 2006 (ADAMS Accession No. ML060610209) summarized an October 4, 2005, conference call which the NRC staff participated in with the licensee to discuss the licensee's SG tube inspections during their Cycle 12 refueling outage. The licensee provided additional information regarding their SG tube inspections during their Cycle 12 refueling outage by letters dated September 8, 2006 (ADAMS Accession No. ML062560349), and January 16, 2007 (ADAMS Accession No. ML070170225).

Byron Station, Unit No. 2 (Byron) has four Westinghouse Model D5 SGs, which are designated 2A through 2D. All four SGs were inspected during the Cycle 12 refueling outage (RFO). Each SG has 4,570 thermally-treated Alloy 600 tubes with an outside diameter of 0.750-inch and a nominal wall thickness of 0.043-inch. The tubes are hydraulically expanded for the full-depth of the tubesheet at each end. The tubes are supported by Type 405 stainless steel support plates with quatrefoil-shaped holes. The U-bend region of the tubes installed in Rows 1 through 9 was thermally-treated after bending in order to reduce stress.

The licensee provided the scope, extent, methods, and results of the Byron SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (i.e., tube plugging) taken in response to the inspection findings.

The staff has the following notes/observations as a result of reviewing the information provided by the licensee.

- During the Cycle 12 RFO, the licensee performed a visual inspection of the secondary side steam drum and moisture separator region for SG 2B. As a result of the visual inspection, the only degradation identified was erosion in the primary moisture separator region. The licensee reported that 12 of the 16 carbon steel primary separator assemblies were missing the magnetite layer which provides corrosion protection to the assemblies. The licensee reported that they supplemented the visual inspection with ultrasonic thickness measurements in areas with the most apparent erosion. The

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largest percent nominal wall loss reported was 27 percent. Westinghouse performed SG thermal performance, structural adequacy, and loose parts assessments and determined that the as-found condition of the primary separator assemblies is acceptable for continued operation for the next operating cycle. The licensee indicated that secondary side steam drum and moisture separator region inspections are planned for the Spring 2007 RFO for all four SGs.

- There are several tubes (approximately 15 tubes) with wear at the tube support plates in the pre-heater region.

Based on a review of the information provided, the NRC staff concludes that the licensee provided the information required by their TSs. In addition, the NRC staff concludes that there are no technical issues that warrant follow-up actions at this time, since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience, at similarly designed and operated units.

Principal Contributor: L. Miller

Date: March 19, 2007