

Commonwealth Edison Company
Byron Generating Station
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March 19, 1996



LTR: BYRON-96-0074
FILE: 3.11.0320

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Document Control Desk

SUBJECT: Byron Unit 1
Steam Generator Interim Plugging Criteria 90 Day Report
NPF-37; NRC Docket No. 50-454

- References:
1. November 9, 1995, Letter from M. D. Lynch (NRR) to D.L. Farrar (ComEd) Issuing Amendment No. 77 to Facility Operating Licenses NPF-37 and 66, Docket Nos. STN 50-454 and STN 50-455.
 2. NRC Generic Letter 95-05, "Voltage-Based Criteria for the Repair of Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking," dated August 3, 1995.
 3. September 20, 1995, Letter from H. Pontious to U.S. NRC regarding the September 13, 1995 Teleconference concerning the increase in the Interim Plugging Criteria.

In Reference 1, NRC approved a license amendment for Byron Station to implement a voltage-based Interim Plugging Criteria (IPC) for Unit 1 through Cycle 8 for Outer Diameter Stress Corrosion Cracking in steam generator tubing. NRC Generic Letter 95-05 (Reference 2) served as guidance for this amendment request. NRC Generic Letter 95-05 requires that the final results of the steam generator inspection and tube integrity evaluation be submitted to the Staff within 90 days of restart following a steam generator inspection that implemented a voltage-based repair criteria. In addition, Reference 3 requires a complete report to be submitted to the staff within 90 days following plant restart regarding the steam generator internal visual inspections performed to support the increased interim plugging criteria.

Pursuant to these requirements, Commonwealth Edison (ComEd) is submitting the enclosed reports concerning the Byron Unit 1 Cycle 7 Mid-Cycle Outage steam generator IPC inspections and tube integrity evaluation. Attachment A to this letter contains the final report of the steam generator internal visual inspections performed to verify tube support plate integrity for support of the increased IPC. Attachment B to this letter contains the results of the steam generator IPC eddy current inspection and results of the tube integrity evaluations.

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Please address any questions regarding this matter to Mr. Jay Smith, Byron Site Engineering, at (815) 234-5441, extension 2604.

Sincerely,



K. L. Kofron
Station Manager
Byron Nuclear Power Station

KLK/JS/rp

Attachments

cc: H. Miller, Regional Administrator - RIII
H. Peterson, Senior Resident Inspector - Byron
G. Dick, Byron Project Manager - NRR
Office of Nuclear Facility Safety - IDNS

ATTACHMENT A

TUBE SUPPORT PLATE

STRUCTURAL INTEGRITY VERIFICATIONS

Tube Support Plate Integrity Verifications

The structural integrity of steam generator (SG) internal components that are important to the bases of 3.0 volt IPC were inspected during B1P02 in accordance with the "SG Structural Integrity Plan in Support of Braidwood-1 and Byron-1 3.0 volt IPC" (Inspection Plan). This Inspection Plan involved the performance of visual inspections and enhanced eddy current examinations of key components.

For Byron-1, the Inspection Plan required inspection of seven of the eleven stayrod nuts located at the top support plate during the Mid-cycle outage. The purpose of the stayrods is to ensure proper spacing and support of the tube support plates (TSP). The stayrods consist of a 1 inch diameter stud that is threaded into the tubesheet and extended through each TSP. One stayrod extends from the top of the preheater divider plate through the top TSP. Spacers consisting of a 1.25 inch diameter pipe are installed over each stayrod stud. The spacers extend from the top of one tube support plate to the bottom of the next higher tube support plate. This ensures proper spacing and support of the plates. A nut is threaded on the stud at the top support plate to hold the entire stayrod/spacer assembly in place. The nut is welded to the support plate at two locations and is welded to the stayrod in one location. The purpose of the visual inspection is to verify that each of stayrod nuts is in contact with the tube support plate and that the welds are not degraded.

A visual inspection was performed in the 1D SG on seven (7) stayrod nuts located at the top support plate. All areas inspected were cleaned with a high pressure water lance prior to inspection. Proper lighting and resolution was verified to meet ASME VT-1 requirements. Each stayrod nut was verified to be in contact with the support plate and properly welded to the support plate at two locations. Each stayrod nut was also verified to contain a weld that joined the nut to the stayrod. Degradation of the welds was not found in any location. Confirmation of proper nut to plate contact and integrity of the welds ensures that the stayrods serve their intended function as assumed in the bases for the 3.0 volt IPC.

Enhanced eddy current examinations were performed in the areas of the three anti-rotation devices in each SG using the EPRI developed technique. The focus of this inspection was to verify the integrity of the tube support plate. The enhanced technique involved acquiring data with a bobbin coil probe at a reduced pull speed of 12 inches per second or less. Anomalies found were to be compared to defect signals from laboratory support plates fabricated and tested by EPRI. Fifty (50) intersections were inspected at each anti-rotational device. Due to SG symmetry, 75 tubes were inspected to encompass the 50 intersections per anti-rotation device. Data was collected for the entire length of the tube and each hot leg and cold leg TSP was evaluated. No anomalies indicative of TSP degradation were detected in any SG.

The presence of each tube support plate was verified for all SG tubes by reviewing the bobbin coil eddy current data. This was performed as part of the normal eddy current analysis of each tube.

ATTACHMENT 2

WESTINGHOUSE REPORT

NSD-DDM-1214

SG-96-03-001

BYRON UNIT 1

END-OF-CYCLE 7A

INTERIM PLUGGING CRITERIA REPORT

MARCH 1996