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ComEd

November 9, 1995

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

Attn: Document Control Desk

Reference: H. Pontious letter to the Nuclear Regulatory Commission dated September 20, 1995, transmitting Information Documenting September 13, 1995, Teleconference

Braidwood Station Unit 1
NRC Docket Number 50-456

As stated in the Reference letter, the Commonwealth Edison Company (ComEd) is committed to providing the Staff with a summary of the results of the steam generator internals inspection plan prior to entering Mode 4. Attached is that summary. Also, as stated in the Reference letter, a complete inspection report will be submitted to the Staff within 90 days of plant start-up.

If you have any questions, please contact this office.

Sincerely,

Denise M. Saccomando
Senior Nuclear Licensing Administrator

Attachment

cc: D. Lynch, Senior Project Manager-NRR
R. Assa, Braidwood Project Manager-NRR
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Summary of Braidwood Unit 1 Cycle 5 Steam Generator Internals Inspection Results

During the Braidwood Unit 1 Cycle 5 Refueling Outage (A1RO5) in October of 1995, an inspection of the Braidwood Unit 1 Steam Generator (SG) internal load path components was conducted in accordance with the "SG Structural Inspection Plan In Support of Braidwood-1 and Byron-1 3.0 Volt IPC," (Inspection Plan) September 1995. This inspection involved an eddy current examination of the Tube Support Plates (TSP) in the area of the anti-rotation devices, a visual inspection of the lower Flow Distribution Baffle (FDB) vertical support bar welds, and a visual verification of the tube bundle wrapper alignment in all four Unit 1 SGs. In the 1A SG only, visual inspections were performed of the top TSP in the area of the anti-rotation devices and Patch Plate seams, stayrod nuts on the top TSP, stayrod spacers between the 8th and 9th TSPs, and TSP vertical support bars and welds. Also in the 1A SG only, an eddy current examination of the TSP in the area of the Patch Plate seams was performed.

Visual Inspection Program

In accordance with the inspection plan, the following visual inspections were conducted.

Visual inspection of the top tube support plate:

A visual inspection of the top TSP in the 1A SG was conducted. This inspection concentrated on the outer periphery of the TSP with emphasis in the areas of the anti-rotation devices and the Patch Plate seams. In these areas, video inspections were performed at the top TSP within the bundle, 5 rows deep. These inspections verified the presence of the top TSP, and that no TSP degradation had taken place.

Visual Inspection of Stayrod Nuts:

Nine stayrod nuts were inspected in the 1A SG. The stayrod nuts were found to be present and in contact with and welded to the top TSP. This ensures that the stayrod had not unscrewed from the tubesheet and that the stayrod nut at the top TSP had not unscrewed from the stayrod. The nuts were welded to the top of the TSP at two locations and to the stayrod at one location. The presence and integrity of the welds were verified to the best extent possible.

Stayrod Spacers

A visual inspection of 7 stayrod spacers in the 1A SG between the eighth and ninth tube support plates was conducted. These stayrod spacers were inspected for evidence of degradation, i.e. bowing, cracking and corrosion. No evidence of degradation of the Stayrod Spacers was found.

Wedges

Since the TSP displacement analysis does not take credit for the wedges limiting movement of the TSP, only those wedges that could be readily inspected during the course of other SG internal visual inspections were examined. The examination consisted of verifying that the wedges were present in their specified locations and that the weld connecting the wedge to the SG wrapper was intact. A total of six wedges and their associated welds were examined during this inspection. All six of these wedges were on the top TSP in the 1A SG. The presence of the wedges on the FDB in all four SGs was also verified during the inspection of the vertical support bars on the bottom of the FDB. Due to the examination being performed on the bottom of the FDB, the weld connecting these wedges to the wrapper could not be verified. All wedges were verified to be in their specified location and the welds, that could be inspected, between the wedges and the SG Wrapper were present.

Wrapper Support Blocks

The integrity of the wrapper support blocks was verified by inspecting the SG wrapper to shell alignment. The alignment was visually verified in all of the SGs through the 2" inspection port openings located at 90 degree intervals around the circumference of the SG. No wrapper to shell misalignment was identified in any of the Braidwood Unit 1 SGs.

TSP Vertical Support Bars and Welds:

Over 80 vertical support bars and over 140 vertical support bar welds were inspected. The bars and welds were located on the eleventh (top) TSP, tenth TSP, ninth TSP, and eighth TSP for the 1A SG and located on the bottom of the FDB in all of the SGs. All vertical support bars were in place with no visible signs of corrosion. All vertical support bar welds were inspected for degradation with none detected.

Eddy Current Examination Program

An eddy current inspection of the TSPs was conducted. This inspection plan was designed to:

1. Verify the presence of the TSP.

2. Examine for the presence of cracks or other degradation of the TSP using a developmental EPRI inspection technique.

The eddy current inspections were conducted on groupings of approximately fifty intersections around each of the three anti-rotation devices in each SG and twenty intersections around the Patch Plate seams in the 1A SG. Table 1 identifies the number of tubes examined by the developmental EPRI TSP eddy current inspection technique. Seventy-five tubes were examined to achieve fifty intersections at these three locations. Due to the symmetry of the SG, fifty intersections around one anti-rotation device were in the same tubes as the fifty intersections around the second anti-rotation device. The third anti-rotation device was at the tube lane between the cold-leg and the hot-leg. Therefore, the fifty intersections were made up of twenty-five tubes on the hot-leg side and the same twenty-five tubes on the cold-leg side. The additional twenty tubes in the 1A SG are due to the examination around the Patch Plate seams. The eddy current examinations were conducted by pulling the bobbin coil probe at a maximum speed of 12 inches per second as compared to 24 inches per second for normal bobbin coil examinations. Since the full length of the tube was examined at the 12 inch per second speed, the integrity of the TSPs at each elevation could be determined.

Several TSP indications were considered to have anomalies as compared to the TSP mock-up used to develop this eddy current inspection program. These anomalies were further examined using the Plus Point coil for dispositioning. Table 1 lists the number of tubes examined by the bobbin coil probe and the number of anomalies dispositioned by the Plus Point probe. The 1D SG has more anomalies examined by the Plus Point probe due to this SG being used to examine a representative sample of small anomalies to ensure small anomalies are not a concern. None of the anomalous signals were found to be due to degradation of the TSP.

The presence of the TSP was verified for all SG tubes.

Conclusion

Braidwood Station met their commitment to inspect the steam generator internal load path components. As a result of this inspection of the Braidwood Unit 1 SG internals, no degradation was identified. ComEd is confident that the internal load carrying components necessary to implement the 3.0 volt IPC are intact and capable of supporting this plugging/repair criteria. A complete inspection report will be submitted to the staff within 90 days of plant start-up.