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United States Nuclear Regulatory Commission
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Byron Station Unit 1
Facility Operating License No. NPF-37
NRC Docket No. STN 50-454

Subject: Byron Station Unit 1 60-Day Response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

Reference: (1) Letter from Keith R. Jury (Exelon Generation Company, LLC/AmerGen Energy Company, LLC) to U. S. NRC, "Initial response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"," dated July 27, 2004

On May 28, 2004, the NRC issued NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors." This bulletin requires the following information be submitted to the NRC within 60 days of plant restart following the next inspection of the Alloy 82/182/600 pressurizer penetration and steam space piping connections:

> "...a statement indicating that the inspections described in the licensee's response to item (1)(c) of this bulletin were completed and a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings or boric acid, and any corrective actions taken and/or repairs made as a result of the indications found."

Pursuant to 10 CFR 50.54, "Conditions of licenses," paragraph (f), the Attachment to this letter provides the Byron Station, Unit 1 60-day response. This response is due to the NRC by December 15, 2006.

Should you have any questions or desire additional information regarding this letter, please contact William Grundmann, Regulatory Assurance Manager, at (815) 406-2800.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Executed on 12/7/06

David M. Hoots
Site Vice President
Byron Nuclear Generating Station

Attachment: Byron Station Unit 1 60-Day Response to NRC Bulletin 2004-01

ATTACHMENT

Byron Station Unit 1

60-Day Response to NRC Bulletin 2004-01

"Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

Attachment

Byron Station Unit 1

60-Day Response to NRC Bulletin 2004-01

On May 28, 2004, the NRC issued NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors." This bulletin requires the following information be submitted to the NRC within 60 days of plant restart following the next inspection of the Alloy 82/182/600 pressurizer penetration and steam space piping connections:

(2) Within 60 days of plant restart following the next inspection of the Alloy 82/182/600 pressurizer penetrations and steam space piping connections, the subject PWR licensees should either:

(a) submit to the NRC a statement indicating that the inspections described in the licensee's response to item (1)(c) of this bulletin were completed and a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings of boric acid, and any corrective actions taken and/or repairs made as a result of the indications found,

or

(b) if the licensee was unable to complete the inspections described in response to item (1)(c) of this bulletin, submit to the NRC a summary of the inspections performed, the extent of the inspections, the methods used, a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings of boric acid, and any corrective actions taken and/or repairs made as a result of the indications found. In addition, supplement the answer which you provided to item (1)(d) above to explain why the inspections that you completed were adequate for the purpose of maintaining the integrity of your facility's RCPB and for meeting all applicable regulatory requirements which pertain to your facility.

Response

Statement indicating inspections described in licensee's response to item (1)(c) were completed and description of the as-found condition of the pressurizer shell

The Byron Station response to item (1)(c) of this bulletin, documented in Reference 1, is summarized as follows:

Byron Station will perform a 100% BMV examination of all affected pressurizer penetrations and piping connections during the next refueling outage. The visual examinations will continue to be performed by certified Level II/III visual examiners qualified in the detection

and assessment of boric acid leakage. The examinations will be documented in accordance with procedures ER-AA-335-015 and ER-AP-331-1002 with written reports. In addition, Byron Station will continue to perform this BMV examination in each subsequent refueling outage until appropriate mitigation has been implemented to eliminate the PWSCC susceptibility of the pressurizer penetrations and steam space piping connections.

Examinations as described above (100% bare metal visual examination of all affected Byron Station, Unit 1 Alloy 82/182/600 pressurizer penetrations and piping connections) were performed during Byron Station, Unit 1 refueling outage 14 (i.e., B1R14) in September 2006. The pressurizer penetrations such as upper level taps were not fabricated from PWSCC susceptible materials and do not require examination under this bulletin. The examinations are limited to the nozzle to safe-end welds fabricated from Alloy 600 materials and are susceptible to PWSCC. The examinations of all five pressurizer nozzle to safe-end welds (steam space piping connections) and adjacent pressurizer shell and nozzle surfaces were performed with the system depressurized and at ambient temperature. The examinations were implemented under Exelon corporate procedure ER-AP-331-1001, *Boric Acid Corrosion Control (BACC) Inspection Locations, Implementation and Inspection Guidelines.* The examinations were performed and documented in accordance with ER-AA-335-015, *VT-2 Visual Examination.* Evidence of leakage would be evaluated under ER-AP-331-1002, *Boric Acid Corrosion Control Program Identification, Screening, and Evaluation.*

The examinations, performed by VT-2 qualified personnel, were performed after insulation was removed from the entire top portion of the pressurizer and the five associated nozzle safe-ends. The direct visual examinations were of the full circumferential surface of each nozzle safe-end and adjacent surfaces, thereby ensuring any boric acid leakage would be easily identified. No evidence of boric acid deposits associated with reactor coolant system leakage was identified during the examination of the five nozzle safe-ends and adjacent surfaces.

Findings of Relevant Indications, Followup NDE, Summary of Relevant NDE Indications, and Summary of Disposition of any Findings

No follow-up NDE or disposition of NDE indications or findings was required based on the results of the examinations of the five nozzle safe-ends and adjacent pressurizer shell surfaces.

Corrective Actions Taken

There were no corrective actions taken since no evidence of boric acid leakage was identified and no followup NDE or disposition of findings was required.

Mitigation Actions Completed

Byron Station completed the installation of PWCSS resistant, full structural weld overlays, of all pressurizer nozzle safe-ends (3 safeties, 1 relief, 1 spray and the surge line nozzle) during B1R14. With the completion of the overlays, Byron Station will no longer perform a 100% bare metal visual examination of the nozzle safe-ends, since they are no longer deemed susceptible to PWSCC degradation.