

RS-08-018

February 26, 2008

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: Additional Information Supporting Request for Amendment to Technical Specification 5.5.16, "Containment Leakage Rate Testing Program"

- References:
1. Letter from D. M. Benyak (Exelon Generation Company, LLC) to U. S. NRC, "Request for Amendment to Technical Specification 5.5.16, 'Containment Leakage Rate Testing Program,'" dated April 4, 2007
 2. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Response to Request for Additional Information Regarding Request for Amendment to Technical Specification 5.5.16, 'Containment Leakage Rate Testing Program,'" dated October 10, 2007
 3. Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. NRC, "Additional Information Supporting Request for Amendment to Technical Specification 5.5.16, 'Containment Leakage Rate Testing Program,'" dated January 31, 2008

In Reference 1, Exelon Generation Company, LLC (EGC) requested an amendment to Appendix A, Technical Specifications (TS), of Facility Operating License Nos. NPF-72, NPF-77, NPF-37, and NPF-66 for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, respectively. The proposed change revises TS 5.5.16, "Containment Leakage Rate Testing Program," to reflect a one-time five-year deferral of the containment Type A integrated leak rate test from once in 10 years to once in 15 years.

Additional information supporting this request was submitted to the NRC in Reference 2. In the Reference 2 submittal, EGC provided references to inservice inspection summary reports, which were previously submitted to the NRC, that provide information related to containment inservice inspections (CISIs) and historic highlights. In recent discussions with the NRC, the NRC requested that EGC provide a summary that documents significant indications noted during the CISIs and actions taken to disposition the indications. In response to this request, EGC is providing the attached information for Braidwood Station. Similar information was previously submitted to the NRC for Byron Station in Reference 3.

There are no regulatory commitments contained in this letter. If you have any questions concerning this letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of February 2008.

Respectfully,

A handwritten signature in black ink that reads "Patrick R. Simpson". The signature is written in a cursive style with a large initial "P".

Patrick R. Simpson
Manager – Licensing

Attachment: Summary of Braidwood Station Containment Inspections

ATTACHMENT
Summary of Braidwood Station Containment Inspections

Overview

Significant indications noted during the Containment Inservice Inspections (CISIs) performed at Braidwood Station, Units 1 and 2, are summarized in Tables 1 and 2 below. The scope of this information pertains to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWL, examinations associated with the Braidwood Station ASME Class CC Concrete Containment Structures and Post Tensioning Systems (i.e., tendons). Specifically, summary information from the previous two ASME Section XI, Subsection IWL, surveillance activities (i.e., examinations performed in 2001 and 2006) is provided.

In addition, augmented examinations of selected concrete locations and post tensioning system grease caps are performed on an annual basis. A summary of the augmented examinations is also provided.

Significant indications identified during ASME Section XI, Subsection IWE, examinations associated with the Braidwood Station metallic liner were previously submitted to the NRC in the referenced letter (i.e., response to NRC Request 7). These indications were related to moisture barrier degradation. No other significant indications were identified during the IWE examinations.

ASME Section XI Concrete Examinations

Concrete examinations performed in 2001 and 2006 in accordance with ASME Section XI, Subsection IWL, revealed no conditions that could potentially challenge the structural integrity of the containment structures at Braidwood Station. However, indications were identified during the examinations that required evaluation and, in some instances, repair. Annual augmented examinations have also been established for some indications. Table 1 provides specific examples of important findings, actions to disposition the findings, and the date of the corresponding inservice inspection summary report.

The Summary Report Date column lists "N/A" for some of the findings. These findings were deemed important; however, reporting in the inservice inspection summary report was not required.

Table 1				
ASME Section XI IWL Concrete Examination Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
1	2001	Evidence of moisture was identified inside the Main Steam Isolation Valve (MSIV) room at the point where the floor meets the wall. Discolored concrete was identified.	Indication was examined again during 2002. No change in condition was identified.	Note 1
1	2001	Construction wood was discovered embedded in the concrete wall.	Wood was removed and a cosmetic repair was completed.	Note 1

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Table 1				
ASME Section XI IWL Concrete Examination Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
1	2001	A degraded construction joint was identified below grade level. Dry/white minerals existed within the joint and there was evidence of moisture in the past.	Due to the evidence of moisture, a cosmetic repair was completed. No degraded reinforcing steel was identified during the repair.	Note 1
1	2001	A small area of honeycomb existed in the vicinity of a horizontal tendon bearing plate. The edge of the bearing plate was exposed, and moisture was seeping from the void.	Due to the void existing near the tendon anchorage bearing plate and the presence of moisture, repairs were completed. No degraded reinforcing steel was identified during the repair.	Note 1
1	2001	Approximately 80% of the containment dome surface (i.e., exposed to elements) was degraded.	The containment dome surface was re-coated.	01/10/2002 08/12/2002
1	2006	Degradation was identified in the form of voids, cracks, minerals, and evidence of moisture intrusion in the tendon tunnel ceiling near vertical tendon anchorage locations V-41 and V-79. The source of moisture was ground water.	The indication was evaluated; the indication does not affect the structural integrity of the containment. Cosmetic repairs are scheduled to be completed by July 1, 2008.	N/A
1	2006	Grease leakage was identified through the containment wall exterior near a previously placed patch that was installed to support the steam generator replacement project. The source of leakage is sheathing filler through a crack.	The indication is acceptable based on the small quantity of grease loss. The indication is being monitored on an annual basis during the summer months, when the sheathing filler viscosity results in the worst-case condition for leakage.	02/22/2008
1	2007	Grease leakage was identified through the containment wall exterior at a horizontal construction joint. This indication was identified during general walkdowns, not during a scheduled ASME Section XI, Subsection IWL, surveillance activity.	The indication is acceptable based on the small quantity of grease loss. The indication is being monitored on an annual basis during the summer months, when the sheathing filler viscosity results in the worst-case condition for leakage.	02/22/2008
2	2001	Construction wood was discovered embedded in the concrete wall.	Wood was removed and a cosmetic repair was completed.	N/A

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Table 1				
ASME Section XI IWL Concrete Examination Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
2	2001	Construction-related voids were identified in the E/ED and E/FE buttresses, with the end of reinforcing steel members exposed.	Due to exposed reinforcing steel, cosmetic repairs were completed. No degraded reinforcing steel was identified during the repairs.	N/A
2	2006	Degradation was identified in the form of wet stalactites, discolored mineral deposits, and cracking near a previously placed patch in the tendon tunnel ceiling near the anchorage for tendon V-345. The source of moisture was ground water.	The indication was evaluated; the indication does not affect the structural integrity of the containment. Cosmetic repairs are scheduled to be completed by July 1, 2008.	N/A
2	2006	Degradation was identified in the form of discolored mineral deposits, cracks, and evidence of moisture near a previously placed patch in the tendon tunnel ceiling near the anchorage for tendon V-348. The indication was adjacent to an embedded plate. The source of moisture was ground water.	The indication was evaluated; the indication does not affect the structural integrity of the containment. Cosmetic repairs are scheduled to be completed by July 1, 2008.	N/A
2	2006	Degradation was identified in a previously placed patch in the exterior of the containment surface (i.e., outdoors). The degradation was caused by moisture entering underneath the patching material. The freeze/thaw cycles caused materials to loosen and fall away. No evidence of exposed reinforcing steel was observed.	The indication was evaluated; the indication does not affect the structural integrity of the containment. Cosmetic repairs are scheduled to be completed by July 1, 2008.	N/A
2	2006	Grease leakage was identified through the containment wall exterior at a construction joint.	The indication is acceptable based on the small quantity of grease loss. The indication is being monitored on an annual basis during the summer months, when the sheathing filler viscosity results in the worst-case condition for leakage.	01/29/2007

Note 1: The Summary Report dated January 29, 2002, identified 29 indications that required additional actions (i.e., cosmetic repair or additional examinations) to ensure the indications did not create conditions where structural degradation may occur. This indication is one of the 29 reported indications.

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ASME Section XI Post Tensioning Indications

During the ASME Section XI, Subsection IWL, Post Tensioning (i.e., tendon) examinations performed in 2001 and 2006, no conditions were identified that could potentially challenge the structural integrity of the Braidwood Station containment structures. Identified findings were evaluated and dispositioned as acceptable. Table 2 provides specific examples of important findings, actions to disposition the findings, and the date of the corresponding inservice inspection summary report.

The Summary Report Date column lists "N/A" for some of the findings. These findings were deemed important; however, reporting in the inservice inspection summary report was not required.

Table 2				
ASME Section XI IWL Post Tensioning (Tendon) Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
1	2001	Water was discovered in tendon D-1-37.	A sheathing filler sample was obtained and analyzed per ASME Section XI. No evidence of active corrosion was identified. Sheathing filler grease was replaced in the tendon end.	01/10/2002 08/12/2002
1	2001	A missing wire/button head was identified on horizontal tendon H-34-AC. The cause was construction-related. The wire was documented as a split button head during construction and was not considered as an effective wire during construction.	An evaluation was performed; dispositioned as acceptable. No evidence of active corrosion was identified.	01/10/2002 08/12/2002
1	2006	Water was discovered in several tendons.	Sheathing filler samples were obtained and analyzed per ASME Section XI. No evidence of active corrosion was identified. Sheathing filler grease was replaced in the tendon ends.	07/28/2006

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Table 2				
ASME Section XI IWL Post Tensioning (Tendon) Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
1	2006	During the as-found VT-1 examination of the field end of tendon H-67-CB, two ineffective wires were observed that had not been identified during the last inspection (i.e., original construction).	The two wires were documented as "chewed" wires during construction and were rejected during construction. The evaluation of the condition concluded the probable cause of the indication was the damaged wires receded below the face of the anchor head between the time of construction and the 2006 surveillance.	N/A
1	2006	Vertical tendon V-133 was de-tensioned for the purpose of wire removal and testing. During re-tensioning, an additional wire was discovered to be missing. The wire receded into the anchor head during re-tensioning.	An evaluation was performed; dispositioned as acceptable. Physical tests on wire that was removed met all acceptance criteria.	N/A
2	2001	Saturated moisture and water was discovered in several tendons.	Sheathing filler samples were obtained and analyzed per ASME Section XI. No evidence of active corrosion was identified. Sheathing filler grease was replaced in the tendon ends for all but four tendons. For the four tendons with a history of free water accumulation, sheathing filler grease was replaced in the entire tendon; wire was removed and subjected to examination and physical testing was performed. In addition, a continuity test was performed on all wires of one tendon.	01/10/2002 08/12/2002
2	2001	During the de-tensioning process, an additional button-head was identified as missing. The cause was determined to be a button head that was identified as being undersized during construction that had slipped into the anchorage.	The tendon was subjected to physical testing. The wire was removed for examination and testing. A continuity test was performed on the tendon wires. All acceptance criteria were met.	01/10/2002 08/12/2002

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Table 2 ASME Section XI IWL Post Tensioning (Tendon) Indications				
Unit	Year Identified	Description of Finding	Disposition	Summary Report Date
2	2006	Water was discovered in several tendons.	Sheathing filler samples were obtained and analyzed per ASME Section XI. No evidence of active corrosion was identified. Sheathing filler grease was replaced in the tendon ends.	01/29/2007
2	2006	For the shop end of horizontal tendon H-26-DF, two protruding wires were identified during original construction. During the 2006 surveillance, three protruding wires were identified.	The exact cause was not determined. However, the likely cause was attributed to this wire extending out from the anchorage over time due to "bird-nesting" (i.e., twisting) during construction.	N/A
2	2006	For the field end of vertical tendon V-225, no missing or unseated wires were identified during original construction. During the 2006 surveillance, one missing wire was identified.	This wire was documented as a "chewed" wire during construction and was rejected during construction. The evaluation of the condition concluded the probable cause of the indication was the damaged wires receded below the face of the anchor head between the time of construction and the 2006 surveillance.	N/A

Augmented Inspections and Tests

Annual examinations of all tendon grease caps, at locations below grade and on the dome, are performed at Braidwood Station due to a history of free water at specific locations. During the examinations, the grease caps are inspected for leakage, deformation, and evidence of moisture. No conditions that challenge the structural integrity of the grease caps have been identified.

During every post tensioning surveillance (i.e., five year frequency), specific tendons that have exhibited free water are selected for examination in addition to the population required by ASME Section XI, Subsection IWL. Findings identified during these examinations are evaluated and dispositioned in accordance with ASME Section XI, Subsection IWL.

With regard to augmented concrete examinations, the augmented examinations are discussed in Table 1. Annual examination of selected areas are performed to monitor the conditions to ensure structural integrity is not challenged.

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