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December 6, 2007
BW070100

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

Braidwood Station, Unit 1
Facility Operating License No. NPF-72
NRC Docket No. STN 50-456

- Subject:** Braidwood Station Unit 1 60-Day Response to the Reporting Requirements of NRC Order EA-03-009, "Issuance of First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors"
- Reference:** Letter from U. S. NRC, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated February 20, 2004

The purpose of this letter is to provide the results of examinations performed at Braidwood Station Unit 1 in accordance with the requirements of the referenced NRC Order.

During the Fall 2007 (A1R13) refueling outage, Braidwood Station Unit 1 completed both the bare metal visual examination in accordance with Order Section IV, paragraphs C.(3) and C.(5)(a) and the visual inspection to identify potential boric acid leaks from pressure-retaining components above the reactor pressure vessel (RPV) in accordance with Section IV, paragraph D of the Order.

Section IV, paragraph E of the Order requires that the results of this examination be submitted to the NRC within 60 days after returning the plant to operation. The Braidwood Station Unit 1 Fall 2007 refueling outage ended on October 26, 2007 and therefore the inspection results must be submitted by December 26, 2007.

U. S. Nuclear Regulatory Commission
December 6, 2007
Page 2

Please direct any questions you may have regarding this submittal to Mr. David Gullott, Regulatory Assurance Manager, at (815) 417-2800.

Sincerely,

A handwritten signature in cursive script that reads "Thomas Coutu".

Thomas Coutu
Site Vice President
Braidwood Station

Attachment: A1R13 Reactor Vessel Head Visual Inspection Results

ATTACHMENT 1
A1R13 Reactor Vessel Head Visual Inspection Results

The examinations performed on the Braidwood Unit 1 reactor pressure vessel (RPV) head during the Fall 2007 refueling outage are contained in the first revised NRC Order EA-03-009 (Order), Section IV, paragraphs C.(3), C.(5)(a) and D and are summarized below.

Section IV, paragraph C.(3) states in part:

For those plants in the Low category, RPV head and head penetration nozzle inspections shall be performed as follows. An inspection meeting the requirements of IV.C.(5)(a) must be completed at least every third refueling outage or every 5 years, whichever occurs first.

Section IV, paragraph C.(5)(a) states:

Bare metal visual examination of 100 percent of the RPV head surface (including 360° around each RPV head penetration nozzle). For RPV heads with the surface obscured by support structure interferences which are located at RPV head elevations downslope from the outermost RPV head penetration, a bare metal visual inspection of no less than 95 percent of the RPV head surface may be performed provided that the examination shall include those areas of the RPV head upslope and downslope from the support structure interference to identify any evidence of boron or corrosive product. Should any evidence of boron or corrosive product be identified, the licensee shall examine the RPV head surface under the support structure to ensure that the RPV head is not degraded.

Section IV, paragraph D states:

During each refueling outage, visual inspections shall be performed to identify potential boric acid leaks from pressure-retaining components above the RPV head. For any plant with boron deposits on the surface of the RPV head or related insulation, discovered either during the inspections required by this Order or otherwise and regardless of the source of the deposit, before returning the plant to operation the Licensee shall perform inspections of the affected RPV head surface and penetrations appropriate to the conditions found to verify the integrity of the affected area and penetrations.

VISUAL EXAMINATION RESULTS

The primary water stress corrosion cracking (PWSCC) susceptibility category for Braidwood Station Unit 1 is Low as defined in Section IV, paragraph B of the Order (plants with a calculated EDY less than 8 AND no previous inspection findings requiring classification as High). During the Braidwood Station Unit 1, Fall 2007 refueling outage (A1R13) an initial walk down was performed with the unit in Mode 3 shortly after reactor shutdown to satisfy the requirements of Section IV, paragraph D. The walk down was performed in accordance with the requirements of the Order and the Braidwood Station Boric Acid Corrosion Control program. During this walk down, no evidence of boric acid leakage was observed. No boric acid was found on the mirror insulation below the nozzles. No new physical deposits were noted.

ATTACHMENT 1
A1R13 Reactor Vessel Head Visual Inspection Results

After the reactor head was removed and set on the stand, a remote bare metal visual inspection of the RPV head was performed to satisfy the requirements of Section IV, paragraph C.(5)(a). The inspection was performed in accordance with Exelon procedures ER-AP-335-1012, "Bare Metal Visual Examination of PWR Vessel Penetrations and Nozzle Safe Ends" and ER-AA-335-015, "VT-2 Visual Examination". The inspection was performed by a certified VT-2 examiner using a combination of crawler-mounted and pole-mounted cameras connected to a video recorder/monitor that provided the examiner with immediate access to the examination surfaces. The remote equipment used was capable of resolving a 1/32" line on an 18% neutral gray card, which is specified in the 1989 Edition of ASME Section XI, as well as the characters on the IWA-2210-1 chart applicable to later Editions of the Code. Resolution was verified at distances between 18" and 24" up to a maximum of 60", but the actual examinations were performed with the camera at much closer distances, giving extremely close views of the nozzle-to-interface region and ensuring any boric acid leakage would be easily identified.

There was no evidence of active boric acid leakage or any degradation on the RPV surfaces. Previously identified staining on the stainless steel penetration tube and minor debris were noted at some penetrations.

The nonvisual examinations required under the Order were previously completed during the Spring 2006 refueling outage (A1R12). A request for relaxation from the nonvisual examination requirements contained in the Order was approved by the NRC in Reference 1.

Due to a surface anomaly identified on the inside diameter surface of vessel head penetration number 74, Braidwood Station committed to perform the following as stated in the Braidwood Unit 1 relaxation request (Reference 2):

A bare metal visual examination of the RPV head surface, consistent with the Order Section IV.C.(5)(a), at the number 74 reactor head penetration location, including a 1-inch annulus 360 degrees around the penetration, will be performed every refueling outage until the next required volumetric examination is performed.

There was no evidence of active boric acid leakage or any degradation on the adjacent RPV surface noted at penetration number 74 observed during this examination.

REFERENCES

1. Letter from U.S. NRC to C. Crane (Exelon Generation Company, LLC), "Braidwood Station, Unit 1 – Relaxation of the First Revised Order EA-03-009 (TAC Nos. MD3675)," dated September 26, 2007 (ADAMS Accession No. ML072430457)
2. Letter from T. Coutu (Exelon Generation Company, LLC), "Relaxation Request for First Revised Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," dated November 22, 2006 (ADAMS Accession No. ML063260215)