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May 19, 2008
BW080050

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

Braidwood Station, Unit 2
Facility Operating License No. NPF-77
NRC Docket No. STN 50-457

Subject: Pressurizer Weld Overlay Examination Results Related to Braidwood Station
Relief Request I2R-48

- References: (1) Letter from T. Coutu (Exelon Generation Company, LLC) to U. S. NRC, "Second 10-Year Inservice Inspection Interval, Relief Request I2R-48, Structural Weld Overlays on Pressurizer Spray, Relief, Safety and Surge Nozzle Safe-ends and Associated Alternative Repair Techniques," dated February 23, 2007
- (2) Letter from R. Gibbs (U. S. NRC) to C. M. Crane, "Braidwood Station, Units 1 and 2 Evaluation of Inservice Inspection Program Relief Request I2R-48 Pertaining to Structural Weld Overlays on Pressurizer Spray, Relief, Safety, and Surge Nozzle Safe Ends (TAC NOS. MD4590, and MD4591)," dated September 17, 2007

The Reference 1 submittal proposed an alternative (i.e., Relief Request I2R-48), in accordance with 10 CFR 50.55a(a)(3)(i), to the repair/replacement requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 1989 Edition, no Addenda, IWA-4000, for the structural weld overlays on the Braidwood Station pressurizer spray, relief, safety and surge nozzle safe-ends.

Reference 2 documents a commitment made in Reference 1 to provide the details of the ultrasonic examination results of the structural weld overlays on the Braidwood Station Unit 2 pressurizer spray, relief, safety and surge nozzle safe-ends to the NRC within 14 days of the completion of the final ultrasonic examination (UT). The commitment made in Reference 1 requires that a discussion of any repairs to the overlay material and/or base metal and the reason for the repairs also be discussed within the 14-day report.

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In accordance with the Reference 1 commitment, Exelon Generation Company, LLC is providing the details of the repairs to the overlay material and/or base metal, the reason for these repairs, and the UT results of the structural weld overlays on the Braidwood Station Unit 2 pressurizer spray, relief, safety and surge nozzles in an attachment to this letter. The final weld overlay UT conducted during the Unit 2 Spring 2008 refuel outage was completed on May 8, 2008.

This submittal does not contain any new regulatory commitments.

Should you have any questions concerning this letter, please contact Mr. David Gullott, Regulatory Assurance Manager, at (815) 417-2800.

Respectfully,

A handwritten signature in black ink, appearing to read 'B. Hanson', with a long horizontal flourish extending to the right.

Bryan Hanson
Site Vice President
Braidwood Station

Attachment: Unit 2 Spring 2008 Refuel Outage Repairs and Indications for Pressurizer Weld Overlays

ecc: IEMA – Division of Nuclear Safety
Site Vice President - Braidwood Station
Regulatory Assurance Manager - Braidwood Station
Director- Licensing and Regulatory Affairs
Manager, Licensing - Byron, Braidwood, and LaSalle County Stations
Braidwood Commitment Tracking Coordinator
Exelon Document Control Desk Licensing

ATTACHMENT
Unit 2 Spring 2008 Refuel Outage
Repairs and Indications for Pressurizer Weld Overlays

The following is a summary of the results of the Braidwood Unit 2 weld overlay repair and inspection results.

After mirror insulation was removed, an initial bare metal visual (BMV) examination of the existing dissimilar metal welds was performed by Exelon certified VT-2 examiners to confirm there was no existing through-wall leakage. No leakage was identified on any of the six nozzle welds. After the BMV examinations were completed, the existing weld toes were identified and documented. The base metal was ground/cleaned approximately 1.5 inches beyond the overlay end on the stainless steel pipe/fitting side and a minimum 1.5 times the nozzle end thickness beyond the overlay end on the nozzle side. The cleaned surfaces were examined by the liquid penetrant (PT) method. Since there were no indications exceeding 1/16" in length documented for any of the six nozzles, subsequent base metal repairs were not required. A sacrificial weld layer was deposited over the existing base metal using ER309L in accordance with Code Case N-504-2 or Inconel 52MS in accordance with Relief Request I2R-48. The sacrificial layer was examined using visual, PT, and ultrasonic (UT) methods. The remaining layers of Inconel 52MS were applied until adequate deposit thickness was achieved to meet design and final inspection requirements. Overlay surfaces were prepared to meet surface requirements for UT examinations and final PT and UT examinations were performed.

The following tables provide the weld overlay repair and inspection results for Braidwood Unit 2 pressurizer spray, relief, safety and surge nozzles. Comments regarding in-process repair activities are based on entries provided through the welding vendor's "Anomaly Tracking Sheets" or through final approved NDE data reports.

Surge Nozzle (Overlay Weld Number 2PN-01-SW-01)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No recordable indications were noted (including area where Code Data Plate attached by welding was removed).
In-process Repair	NRI	The argon supply to welding heads (two welding heads were used) was lost and tungsten stub out occurred. Grinding created two areas, 2.25" long X .75" wide X .180" deep and 2.25" long X .80" wide X .090" deep. Visual and liquid penetrant examinations were performed on both areas, no indications were noted. Grinding went into layers 2 and 3 (temperbead layers), so 48 hour hold clock for surge line overlay was reinitiated.
Final Overlay PT	NRI	No indications were noted.
Final Overlay UT	NRI	No recordable indications were noted.

Spray Nozzle (Overlay Weld Number 2PN-02-SW-02)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No recordable indications were noted.
Final Overlay PT	NRI	No recordable indications were noted.
Final Overlay UT	NRI	No recordable indications were noted.

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Relief (PORV) Nozzle (Overlay Weld Number 2PN-03-SW-03)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No indications were noted.
Final Overlay PT	NRI	No indications were noted.
Final Overlay UT	NRI	No recordable indications were noted.

"A" Safety Nozzle (Overlay Weld Number 2PN-04-SW-04)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No indications were noted.
In-process Repair	NRI	The argon supply to welding head was lost and tungsten stub out occurred. Grinding resulted in an area 2.20" long X .700" wide X .200" deep. Visual and liquid penetrant examinations were performed with no indications noted.
Final Overlay PT	Three Indications	Three linear indications (.064" X .500", .064" X .190", and .040" X .400"). All three indications were flapped out and reexamined by liquid penetrant. All three indications were reduced to an acceptable length (< .0625").
Final Overlay UT	NRI	No recordable indications were noted.

"B" Safety Nozzle (Overlay Weld Number 2PN-05-SW-05)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No recordable indications were noted.
In-Process Repair	NRI	During welding on the P3 nozzle material, welder believed he violated the WPS "bead overlap requirement" associated with beads 7, 8, 11, and 12. PCI Weld Engineering reviewed the condition. Weld beads 6 through 12 were ground from the nozzle and a liquid penetrant examination was performed and accepted, allowing welding to continue.
In-Process Repair	NRI	The argon supply to welding head was lost and tungsten stub out occurred. Grinding resulted in an area 2.50" long X .600" wide X .200" deep. Visual and liquid penetrant examinations were performed with no indications noted.
Final Overlay PT	NRI	No indications were noted.
Final Overlay UT	NRI	No recordable indications were noted.

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Repairs and Indications for Pressurizer Weld Overlays

"C" Safety Nozzle (Overlay Weld Number 2PN-06-SW-06)		
Examination	Results	Comments
Base Metal BMV	NRI	No evidence of through-wall leakage was noted.
Base Metal PT	NRI	No indications were noted.
In-Process Repair	NRI	The argon supply to welding head was lost and tungsten stub out occurred. Grinding resulted in an area 2.00" long X .800" wide X .250" deep. Visual and liquid penetrant examinations were performed with no indications noted.
Final Overlay PT	NRI	No indications were noted.
Final Overlay UT	NRI	No recordable indications were noted.

NRI – No recordable indication.