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An Exelon Company

January 11, 2008
5928-08-20006

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

Three Mile Island, Unit 1 (TMI Unit 1)
Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Three Mile Island, Unit 1 Sixty-Day Response to the Reporting Requirements of NRC Order EA-03-009, "Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors"

References:
1) Letter from USNRC, "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

2) Letter from K. R. Jury to USNRC, "Answer to First Revised NRC Order (EA-03-009) to Modify Licenses Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads," dated March 9, 2004

The purpose of this letter is to provide the TMI Unit 1 sixty-day response to the reporting requirements listed in Section IV, paragraph E, of Reference 1. TMI Unit 1 consented to the First Revised Order EA-03-009 (Order) in Reference 2. The results of the inspections required by Section IV, paragraphs C and D, of the Order are provided in the attachment to this letter. These inspections were performed during the recent TMI Unit 1 T1R17 refueling outage, which concluded on November 21, 2007. As stated in Section IV, paragraph E, of the Order, this report is being submitted within sixty (60) days after the unit has been returned to service, due to the NRC by January 20, 2008.

No new regulatory commitments are established by this submittal.

If any additional information is needed, please contact David J. Distel at (610) 765-5517.

Sincerely,

Pamela B. Cowan
Director - Licensing & Regulatory Affairs
AmerGen Energy Company, LLC

Attachment: Results of the 1R17 (Fall 2007) Inspections of the TMI Unit 1 Reactor Vessel Head

cc: S. J. Collins, USNRC Administrator, Region I
P. J. Bamford, USNRC Project Manager, TMI Unit 1
D. M. Kern, USNRC Senior Resident Inspector, TMI Unit 1
File No. 02048

ATTACHMENT

Results of the T1R17 (Fall 2007) Inspections of the TMI Unit 1 Reactor Vessel Head

The current TMI Unit 1 reactor vessel head replaced the original head and was first installed during the Fall 2003 refueling outage (T1R15). The susceptible Alloy 600/82/182 penetration material in the original head was replaced with Alloy 690/52/152 material in the currently installed head. These penetrations include one reactor head vent pipe penetration, one Reactor Coolant Inventory Tracking System (RCITS) penetration, and sixty-nine control rod drive mechanism (CRDM) penetrations for a total of 71 penetrations. The TMI Unit 1 head is currently categorized "Replaced" per EA-03-009, IV.B. There have been no repairs to the "Replaced" reactor head and the first required bare metal inspection was completed during the Fall 2007 refueling outage (T1R17).

Results of Inspections Performed in Accordance with Section IV, Paragraph C.(4) of First Revised NRC Order EA-03-009

A remote bare metal visual inspection of the TMI Unit 1 reactor pressure vessel (RPV) head was performed during TMI Unit 1 refueling outage T1R17 in Fall 2007, to meet the requirements contained in the First Revised NRC Order EA-03-009 (Order), Section IV, paragraph C.(4), which requires a bare metal visual examination in accordance with Section IV, paragraph C.(5)(a). The inspection included an examination around the full circumference of each RPV head penetration nozzle (i.e., 69 control rod drive mechanism (CRDM) nozzles and the RPV head vent line and the RCITS Reactor Level Instrumentation Line) and the RPV head surface to provide 100% coverage of the RPV head. No evidence of RPV head penetration boric acid leakage, and no evidence of any wastage, was observed.

Boric acid residue was identified on several CRDM nozzles (below the insulation) that trailed down onto the RPV head surface. This trace amount of residue was attributed to previously identified leakage during CRDM venting operations in the 2003 refueling outage (T1R15). This leakage was previously addressed in AmerGen letter to the NRC dated January 12, 2006 (5928-06-20364). The residue was cleaned from the RPV head and the CRDM nozzles, leaving the annulus region between the nozzles clean such that any future RPV head penetration leakage would be easily identified.

The inspection was performed in accordance with procedure ER-AP-335-1012, "Bare Metal Visual Examination of PWR Vessel Penetrations and Nozzle Safe-Ends." The inspection, performed by VT-2 certified personnel, used both "crawler" and pole-mounted cameras connected to a video recorder/monitor that provided the examiner with immediate access to the examination surfaces. The inspection used remote equipment capable of resolving the appropriate detail at two feet. The actual distances viewed were less than two feet, which gave extremely close views of the nozzle to interface region, thereby ensuring any boric acid leakage would be easily identified.

The inspection to meet the requirements of Section IV, paragraph C.(5)(b) of the Order is not required at this time and will be performed in a future refueling outage.

Results of Inspections Performed in Accordance with Section IV, Paragraph D of First Revised NRC Order EA-03-009

VT-2 certified examiners performed a visual inspection to identify potential boric acid leaks from pressure-retaining components above the RPV head. This inspection was performed during the Fall 2007, T1R17 refueling outage after the reactor head was on the head storage stand. Cameras on long handled poles were lowered from the top of the reactor service structure platform to inspect the areas around the CRDM flanges and mirror insulation. No evidence of new boric acid leakage was found on any CRDM flange above the RPV head. As described above regarding the results of inspections performed in accordance with Section IV, paragraph C.(4) of the Order, the inspections of the affected RPV head surface and penetrations (i.e., areas found with boric acid residue) were performed prior to returning the plant to operation to verify the integrity of the affected RPV head surface area and penetrations.