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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: Turkey Point Unit 4, Docket No. 50-251
NRC Bulletin 2003-02 Unit 4 Reactor Pressure Vessel
Lower Head Penetrations Post Outage Inspection Results

Reference 1: FPL Letter 2004-144 from Art Stall to NRC, dated July 27, 2004, "Revised Response to NRC Bulletin 2003-002, "Leakage From Reactor Pressure Vessel Lower Head Penetrations And Reactor Coolant Pressure Boundary Integrity"

On August 21, 2003, the NRC issued Bulletin 2003-02 requesting information on the reactor pressure vessel (RPV) lower head penetration inspection program, including plans for future inspections. NRC Bulletin 2003-02 also requested that within sixty (60) days of plant restart following the next inspection [from the issue of the bulletin] of RPV lower head penetrations, the licensee submit a summary of the inspection performed. By letter dated December 19, 2003, Florida Power and Light Company (FPL) provided a summary of the October, 2003 (cycle 21) refueling outage RPV lower head visual inspection results for Unit 4. FPL hereby submits the RPV lower head penetration inspection results for Turkey Point Unit 4 for the 2005 (cycle 22) refueling outage. This is the second RPV lower head inspection for Unit 4, consistent with the revised commitment made in Reference 1, performed utilizing an ultrasonic testing (UT) method for Turkey Point Units 3 and 4, rather than a bare metal visual inspection (VT-2).

The inspection results are provided in the attachment to this letter. Please contact Walter Parker at (305) 246-6632 if there are any questions.

Very truly yours,

Terry Jones

Terry O. Jones
Vice President
Turkey Point Nuclear Plant

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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NRC BULLETIN 2003-02: REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS POST OUTAGE INSPECTION RESULTS FOR TURKEY POINT UNIT 4

On August 21, 2003, the NRC issued Bulletin 2003-02 [i] requesting information on the reactor pressure vessel (RPV) lower head penetration inspection program, including plans for future inspections. NRC Bulletin 2003-02 also requested that within 60 days of plant restart following the next inspection of RPV lower head penetrations, the licensee submit a summary of the inspection performed. Previously, the results of the Turkey Point Unit 4 fall 2003 refueling outage 100% bare metal visual of the 50 RPV lower head penetrations were identified in Letter L-2003-307. [ii] Florida Power and Light Company (FPL) hereby submits the volumetric RPV lower head penetration inspection results for Turkey Point Unit 4 (PTN-4) for the spring 2005 refueling outage (PTN-4-CYC22).

Turkey Point Unit 4 Spring 2005 (PTN-4-CYC22) Post Outage Reactor Vessel Lower Head Inspection Results:

NRC Bulletin 2003-02 Request 2: Within 60 days of plant restart following the next inspection of the RPV lower head penetrations, the subject PWR addressees should 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 lower head, any findings of relevant indications of throughwall leakage, and a summary of the disposition of any findings of boric acid deposits and any corrective actions taken as a result of indications found.

FPL Response to NRC Bulletin 2003-02 Request 2: The following provides a summary and the details of the Turkey Point Unit 4 RPV lower head penetration inspection performed during the PTN-4-CYC22 refueling outage (RFO).

1. Examination Scope and Extent: An ultrasonic examination (UT) was performed on each of the 50 RPV lower head penetrations, referred to as bottom mounted nozzles (BMN). The examination included the volume of nozzle base material extending from a horizontal plane at least 2 inches below the lowest point of the weld root, to a horizontal plane at least 2 inches above the highest point of the weld toe, consistent with the NRC order for examination of CRDM nozzles. This examination volume was as identified in the FPL revised response to NRC Bulletin 2003-02. [iii]

2. Methods Used: The UT examinations of the 50 BMN penetrations were performed by Framatome ANP, utilizing a rotating probe assembly containing two elements in a pitch/catch configuration. The UT examination method used the time of flight diffraction (TOFD) technique. The single probe assembly provided both axial and circumferential beam directions in the nozzle material. The vendor procedure used for the examinations has been demonstrated using the MRP protocol for demonstration of BMN ultrasonic examination procedures. Most of the data analysis personnel were also involved in the data analysis for the procedure demonstration. The UT technique is demonstrated effective for detection and sizing of cracking in the nozzle wall.

3. Description of the As-Found Condition of the Lower Head: A boric acid walkdown inspection of the cavity and underside of the reactor vessel, with the insulation in place, did not reveal any evidence of nozzle leakage. As identified in the revised response to Bulletin 2003-02, [iii] the UT examination was performed in lieu of a bare metal visual examination due to the high dose associated with the bare metal visual inspection performed in the fall of 2003 at Turkey Point Unit 4. A 100% bare metal visual examination of the 50 bottom mounted nozzles was completed in the fall 2003 refueling outage and no pressure boundary leakage was identified. The results were reported to the NRC in FPL letter 2003-307.

4. Relevant indications of through wall leakage or crack like flaws in the nozzles: There were no crack-like indications identified in the RPV lower head nozzles.

5. Summary of the disposition of any findings of boric acid deposits: There was no evidence of boric acid leakage based on the boric acid walk down and 2003 bare metal visual examination. The UT examination results indicated that there were no service induced degradation or crack-like indications that would lead to pressure boundary leakage from any of the 50 bottom mounted nozzles.

6. Corrective Actions: No corrective actions were required.

7. Conclusion and Summary: The 50 Turkey Point Unit 4 RPV lower head penetrations were examined by the ultrasonic method, without limitation, to a volume that met or exceeded the committed examination volume. No service induced degradation or crack like indications were identified in the 50 penetrations. A boric acid walk down inspection of the cavity and underside of the reactor vessel, with the insulation in place, did not reveal any evidence of nozzle leakage. During the previous 2003 refueling outage, a 100% bare metal visual examination was performed with no pressure boundary leaks identified. Based on the UT results, boric acid walk down, and previous bare metal visual, FPL concluded that the 50 RPV Turkey Point Unit 4 lower head penetrations are not degraded and there are no concerns with their structural integrity. The implementation of the 100% UT examination of the RPV lower head nozzles satisfies the commitment documented in the FPL revised response [iii] to NRC Bulletin 2003-02 [i] for the Turkey Point Unit 4 spring 2005 RFO.

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[i] US NRC Bulletin 2003-02 (ADAMS Accession No. ML032320153), "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity Reactors," from Bruce A. Boger (NRC) to all Pressurized Water Reactor Licensees, August 21, 2003.

[ii] FPL letter L-2003-307, "Turkey Point Unit 4, Docket No. 50-251, NRC Bulletin 2003-02, Leakage From Reactor Pressure Vessel Lower Head Penetrations And Reactor Coolant Pressure Boundary Integrity, Inspection Results" Terry Jones to NRC, December 19, 2003.

[iii] FPL letter L-2004-144, "Florida Power and Light Company, Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Revised Response to NRC Bulletin 2003-02, Leakage From Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity," J. A. Stall to NRC, July 27, 2004.