

August 1, 2005

Mr. James Scarola, Vice President
Shearon Harris Nuclear Power Plant
Carolina Power & Light Company
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER STATION, UNIT 1 - RESPONSE TO
NUCLEAR REGULATORY COMMISSION BULLETIN 2003-02, "LEAKAGE
FROM REACTOR PRESSURE VESSEL LOWER HEAD PENETRATIONS AND
REACTOR COOLANT PRESSURE BOUNDARY INTEGRITY"
(TAC NO. MC0541)

Dear Mr. Scarola:

On August 21, 2003, the U.S. Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity," to the industry. This bulletin informed addressees that current methods of inspecting the reactor pressure vessel (RPV) lower heads may need to be supplemented with bare-metal visual inspections in order to detect reactor coolant pressure boundary leakage. The bulletin also requested these addressees to provide the NRC with information related to inspections that have been performed to verify the integrity of the RPV lower head penetrations.

The bulletin requested a description of the RPV lower head penetration inspection program that would be implemented at their respective plants during the next, and subsequent, refueling outages. This description was to include the extent of the inspection, the inspection methods to be used, the qualification standards for the inspection methods, the process used to resolve the source of findings of boric acid deposits or corrosion, the inspection documentation to be generated, and the basis for concluding that their plant satisfied applicable regulatory requirements related to the structural and leakage integrity of the RPV lower head penetrations.

By letter dated November 13, 2003, Carolina Power and Light Company (CP&L) provided its response to this request. CP&L committed to perform a bare-metal visual examination of the RPV lower head and penetrations during the fall 2004 refueling outage at Shearon Harris Nuclear Power Plant, Unit 1 (Shearon Harris). CP&L also informed the NRC staff that it had performed a 100-percent bare-metal visual examination of all 50 RPV lower head penetrations during the spring 2003 refueling outage. Regarding its plans for inspecting penetrations beyond the fall 2004 refueling outage, CP&L stated that it will monitor industry experience and the Materials Reliability Program's recommendations to ensure that the inspection plans at Shearon Harris are prudent, based on the knowledge available, in order to ensure that the structural and leakage integrity of the RPV lower head penetrations is maintained. The NRC staff notes that there are a number of ongoing industry and NRC staff activities related to developing criteria for lower head penetration inspections. The NRC staff expects that the criteria for these inspections will involve periodic bare metal visual examinations or their equivalent.

The bulletin also requested that addressees provide a summary of the RPV lower head penetration inspection that was performed at their plants, the extent of the inspection and the methods used, a description of the as-found condition of the lower head, any findings of relevant indications of through-wall 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.

By letters dated November 13, 2003, and January 13, 2005, CP&L provided a summary of its inspection results at Shearon Harris for the spring 2003 and fall 2004 refueling outages, respectively. In each of these letters, CP&L reported that it had performed a 100-percent bare-metal visual examination of all 50 RPV lower head penetrations, with no evidence of penetration leakage observed.

Based on its review of CP&L's responses to NRC Bulletin 2003-02, the NRC staff finds that CP&L has met the reporting requirements of the bulletin for Shearon Harris. Accordingly, TAC No. MC0541 is closed for Shearon Harris.

Sincerely,

/RA/

Chandu Patel, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-400

cc: See next page

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By letters dated November 13, 2003, and January 13, 2005, CP&L provided a summary of its inspection results at Shearon Harris for the spring 2003 and fall 2004 refueling outages, respectively. In each of these letters, CP&L reported that it had performed a 100-percent bare-metal visual examination of all 50 RPV lower head penetrations, with no evidence of penetration leakage observed.

Based on its review of CP&L's responses to NRC Bulletin 2003-02, the NRC staff finds that CP&L has met the reporting requirements of the bulletin for Shearon Harris. Accordingly, TAC No. MC0541 is closed for Shearon Harris.

Sincerely,

/RA/

Chandu Patel, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Shearon Harris Nuclear Power Plant, Unit 1

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