Duke Energy®
Carolinas

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August 25, 2008

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

Subject: Duke Energy Carolinas, LLC (Duke)
Catawba Nuclear Station, Unit 1
Docket No. 50-413
Inspection Results Required per First Revised NRC Order (EA-03-009)

By letter dated February 20, 2004, the NRC issued the first Revised NRC Order (EA-03-009) which established interim inspection requirements for reactor pressure vessel heads at Pressurized Water Reactors (PWR). Additionally, the Order imposed requirements for PWR licensees to inspect reactor pressure vessel heads and related penetration nozzles. A report detailing the inspection results should be submitted within 60 days of returning the plant to operation.

Duke performed the required inspections on Catawba Unit 1 during the End-of-Cycle 17 Refueling Outage. The attachment to this letter provides the required inspection results.

This letter and its attachment do not contain any NRC commitments.

Inquiries on this matter should be directed to A. Jones-Young at (803) 701-3051.

Very truly yours,

James R. Morris

Attachment

A101
NRR

James R. Morris affirms that he is the person who subscribed his name to the foregoing statement, and that all matters and facts set forth herein are true and correct to the best of his knowledge.

James R. Morris, Site Vice President

Subscribed and sworn to me: 8/25/08
Date

Notary Public

My commission expires: 7/2/2014
Date

ANTHONY P. JACKSON
NOTARY PUBLIC
MY COMMISSION EXPIRES
JULY 2, 2014
STATE OF SOUTH CAROLINA
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Document Control File 801.01
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NCMPA-1
NCEMC
PMPA
SREC
ELL-EC050

Attachment 1

Catawba Nuclear Station, Unit 1 End-of-Cycle 17
Reactor Pressure Vessel (RPV) Head Inspection Results Report

During the Catawba Unit 1 End-of-Cycle 17 Refueling Outage, Duke performed a best effort visual inspection of the RPV head as required by Paragraph IV.D of the First Revised NRC Order EA-03-009 dated February 20, 2004. The inspections detected no evidence of pressure boundary leakage, cracking or wastage.

However, subsequent to this best effort visual inspection, an active leak was discovered during the Mode 3 (up) walkdown performed on June 15, 2008. The leak was associated with a mechanical joint on one of the five thermocouple head penetrations located just above the RPV head. Primary system pressure, temperature and level were then reduced to allow for repair of the joint. Further investigation revealed that the source of the leak was related to the carrier ring (grafoil packing) assembly of CETNA #76 (Core Exit Thermocouple Nozzle Assembly). The cause of the leak was determined to be the improper assembly of the CETNA mechanical joint during the refueling outage. Since the leakrate was low and the leak was identified shortly after primary system pressurization, boron deposits were limited to the CETNA assembly and the articulating clamp (part of the CETNA assembly) immediately below. No boron deposits reached the RPV head or the top surface of the metal reflective insulation below the CETNA.

Based on the fact that 1) no findings were identified during the previously performed Unit 1 End-of-Cycle 17 best effort visual inspection of the closure head, 2) the source of the identified boron deposits in conjunction with the duration and the cause of the leak have been determined, 3) a cleanup of all boric acid deposits has been performed and 4) the immediate repair of the CETNA mechanical joint was completed, no concerns related to the structural integrity of the reactor vessel head have been identified. The Catawba Unit 1 RPV closure head will continue to maintain its function as a primary system pressure boundary.