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February 5, 2007

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

ATTENTION: Document Control Center

SUBJECT: Duke Power Company LLC d/b/a
Duke Energy Carolinas, LLC (DUKE)
Catawba Nuclear Station Unit 1
Docket Number 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) Establishing Interim Inspection Requirements for Reactor Vessel Heads at Pressurized Water Reactors. The Order imposed requirements for pressurized water reactor licensees to inspect reactor pressure vessel heads and related penetration nozzles and to submit a report detailing the inspection results within sixty days after returning the unit to operation.

Duke Energy performed the required inspections on Catawba Unit 1 during the End-of-Cycle 16 refueling outage. Attachment 1 provides the required inspection results.

This letter and attachment do not contain any NRC commitments.

Questions regarding the subject submittal should be directed to George Strickland, Catawba Regulatory Compliance at (803) 831-3585.

Sincerely,

James R. Morris

Attachment

A101

U.S. Nuclear Regulatory Commission

February 5, 2007

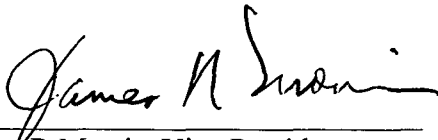
Page 2

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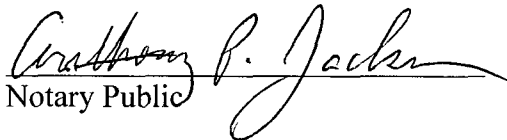
James R. Morris, affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.



James R Morris, Vice President

Subscribed and sworn to me: 2/5/07

Date



Notary Public

My Commission Expires: 7/2/2014

SEAL

Attachment 1

Catawba Nuclear Station, Unit 1 End-of-Cycle 16 Reactor Vessel Head Inspection Results Report

During the Catawba Unit 1 End-of-Cycle 16 refueling outage, Duke Energy performed inspections of the reactor pressure vessel head in accordance with the schedule required by the First Revised NRC Order EA-03-009 dated February 20, 2004. The inspections detected no evidence of leakage, cracking, or wastage.

The susceptibility of the Reactor Pressure Vessel (RPV) head to PWSCC-related degradation, as represented by a value of effective degradation years (EDY), was calculated. The calculated value determined that the Catawba Unit 1 RPV head is in the Low Susceptibility Category.

The Bare Metal Visual (BMV) inspection examined 100 percent of the Reactor Pressure Vessel (RPV) upper head surface including 360° around each RPV head penetration nozzle. The RPV head was found to be free of boron deposits with no evidence of wastage or pressure boundary leakage.

The Ultrasonic (UT) inspection examined the vent line and each Control Rod Drive Mechanism (CRDM) penetration volume from 2 inches above the highest point of the root of the J-groove weld to 1-inch below the lowest point at the toe of the J-groove weld, with the exception of penetration nozzle #78. This included all RPV head penetration nozzle surfaces below the J-groove weld that have an operating stress level of 20 ksi tension and greater. No crack-like indications were detected in the CRDM or vent line penetrations.

The configuration of penetration nozzle #78 did not allow for a complete volumetric examination as required by the Order. The limited projected nozzle length and weld profile below the internal surface of the RPV head, as well as the tapered tip of the thermocouple column restricted the examination volume to 0.70 inch below the lowest point at the toe of the J-groove weld. The uninspectable volume of penetration #78 was less than 0.10 in³. Duke submitted Relaxation Request 06-CN-004 (ML063470049) to the NRC on December 4, 2006 stating that compliance with the coverage requirements of the Order for penetration nozzle #78 would result in hardship without a compensating increase in the level of quality and safety.

UT leak path detection was used to assess if leakage has occurred into the annulus between the RPV head penetration nozzle and the RPV head low-alloy steel for all CRDM penetrations. No UT leak path signals were detected.

Because the vent line penetration was manufactured without a shrink fit, surface examination using dye penetrant was necessary to supplement the volumetric inspection of the vent line penetration. Surface examination included the surface of the vent line penetration J-groove weld and the bottom of the vent line penetration where UT coverage was limited due to geometry. Two rounded indications with major dimensions of approximately 0.25 and 0.125 inches were detected on the surface of the vent line J-groove weld. Both indications were removed by shallow spot grinding. Adequate vent line weld material remained to satisfy all design requirements without subsequent repair. During the removal of the indications, inspections verified that the indications did not possess crack-like characteristics.