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April 28, 2008

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

Attention: Document Control Desk

Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station, Unit 3, Docket Number 50-287
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 Carolinas, LLC, performed the required inspections on Oconee Unit 3 during the End-of-Cycle 23 Refueling Outage, but did not submit the report within sixty days after returning the unit to operation. The failure to submit the report has been entered in the corrective action program. The attachment to this letter provides the required reactor pressure vessel head inspection results.

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

If there are any questions concerning this information, please contact Judy Smith at (864) 885-4309.

Very truly yours,

Dave Baxter, Vice President
Oconee Nuclear Site

Attachment

A101

NRR

Dave Baxter 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.



Dave Baxter, Vice President
Oconee Nuclear Site

Subscribed and sworn to me: 4/28/08
Date

Shila A Smith
Notary Public

My Commission Expires: 6-12-2013
Date

SEAL

U. S. Nuclear Regulatory Commission

April 28, 2008

Page 3

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U. S. Nuclear Regulatory Commission

April 28, 2008

Page 4

bcc: w/attachment

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ONS Document Management

Attachment

Oconee Nuclear Station Unit 3 End-of-Cycle 23 Reactor Pressure Vessel Head (RPVH) Inspection Results Report

During the Oconee Unit 3 End-of-Cycle 23 Refueling Outage, Duke performed inspections of the RPVH 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 pressure boundary leakage, cracking, or wastage.

The susceptibility of the RPVH to Primary Water Stress Corrosion Cracking (PWSCC) related degradation, as represented by a value of Effective Degradation Years (EDY), was calculated. The calculated value determined that the Oconee Unit 3 RPV head remains in the Replaced Category.

The Bare Metal Visual (BMV) inspection examined 100% of the RPV upper head surface, including 360° around each RPVH penetration nozzle. The RPVH exhibited no evidence of wastage or pressure boundary leakage.

The inspection was performed through the nine access ports in the service structure support skirt of the reactor vessel head. The general cleanliness condition of the head was such that the source of any leakage was readily identified. The results of the inspection are as follows:

- Nozzle 7 Leakage from above the nozzle, down nozzle, around the annulus, and on down head. Also a leak from above down onto head and continuing between two other nozzles.
- Nozzle 14 Accumulation on right side, coming from seam in insulation uphill of nozzle running down onto #30.
- Nozzle 19 Dark trail from above, down to nozzle, then on down below nozzle. Appeared to be cutting fluid residue from initial head replacement.
- Nozzle 22 Small pile on uphill left side. No trail down nozzle. Accumulation on insulation directly above pile.
- Nozzle 23 White trail from nozzle 7, around annulus, and on down below nozzle.
- Nozzle 30 360 degree residue in annulus area, several trails from uphill side, down to annulus.
- Nozzle 31 Thin trail from uphill down to nozzle.
- Nozzle 38 Short incomplete trail down left side of nozzle, white residue on uphill side.
- Nozzle 39 Powder on uphill side, down around both sides, appears to be from uphill nozzle #22.

Attachment

Oconee Nuclear Station Unit 3 End-of-Cycle 23 Reactor Pressure Vessel Head (RPVH) Inspection Results Report

- Nozzle 40 Trail down from above nozzle on head, dripping from seam in insulation, trailing down into annulus and on down below nozzle.
- Nozzle 57 (Info only) small rust colored trail (stain) below nozzle, no accumulation of any material.
- Nozzle 58 Buildup on uphill side, chunky powder, with small trail. Accumulation on insulation uphill of nozzle.
- Nozzle 59 Leak from above nozzle into annulus, then on below nozzle.

Except as stated above, all of the accumulated material was white in color and translucent. The material did not appear to have the same consistency as boron previously seen in head inspections performed prior to head replacement. No degradation of the head or control rod drive nozzles was noted. The material seen did not have the appearance of primary system leakage from the control rod drive penetrations, and was suspected to be from Component Cooling Water System leakage from the control rod drive stator cooling water piping dripping onto and through the head insulation seams and penetrations.

Samples of the deposits on the Unit 3 head were taken and analyzed by the Duke General Office Metallurgical Lab for chemical constituency, and were determined to be sodium molybdate. Sodium molybdate is a corrosion inhibitor utilized in the Component Cooling Water System. The majority of the material was subsequently cleaned off the head, although small amounts remained in the annulus areas of the penetrations, with slight staining on the head surface.