



Progress Energy

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

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
60-DAY RESPONSE TO FIRST REVISED NRC ORDER EA-03-009, "ISSUANCE
OF FIRST REVISED NRC ORDER (EA-03-009) ESTABLISHING INTERIM
INSPECTION REQUIREMENTS FOR REACTOR PRESSURE VESSEL HEADS
AT PRESSURIZED WATER REACTORS," DETAILING INSPECTION RESULTS

Ladies and Gentlemen:

On February 11, 2003, the NRC issued Order EA-03-009 for interim inspection requirements for reactor pressure vessel (RPV) heads at pressurized water reactor facilities. On February 20, 2004, the NRC issued the First Revised Order EA-03-009, which superseded Order EA-03-009. The revised Order requires that the Licensee submit a report detailing the inspection results within sixty (60) days after each refueling outage. On May 16, 2006, the Harris Nuclear Plant (HNP) of Carolina Power and Light Company (CP&L) doing business as Progress Energy Carolinas, Inc., completed Refueling Outage 13 (RFO-13).

Attachment 1 provides the required examination results for RFO-13. In summary, the inspections revealed no evidence of recent boric acid leakage or RPV head degradation.

This document contains no new Regulatory Commitment.

Please refer any question regarding this letter to me at (919) 362-3137.

Sincerely,

Dave Corlett
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Harris Nuclear Plant

DHC/jpy

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HNP-06-080

Page 2

Attachments:

1. 60-Day Response Detailing Inspection Results for RFO-13

c:

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Ms. B. O. Hall, N.C. DENR Section Chief

Mr. C. P. Patel, NRC Project Manager

Dr. W. D. Travers, NRC Regional Administrator

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60-DAY RESPONSE DETAILING INSPECTION RESULTS FOR RFO-13

During the recently completed Refueling Outage 13 (RFO-13 from April 9, 2006 to May 16, 2006), HNP performed inspections in accordance with the First Revised NRC Order (EA-03-009) dated February 20, 2004. As required by Section IV.E of the Order, HNP details the following results of the inspections required by Sections IV.C and IV.D of the Order.

IV.A Susceptibility Category

The Harris Plant is in the category of plants considered to be of low susceptibility to Primary Water Stress Corrosion Cracking (PWSCC) based on calculations performed in accordance with Section IV.A of the Order, as well as the absence of previous inspection findings indicating the presence of leakage.

IV.C.(5)(a) Bare Metal Visual

The Order requires that a 100% Bare Metal Visual (BMV) Examination of the Reactor Pressure Vessel (RPV) head surface be performed within two refueling outages following issuance of the Order. The Harris Plant chose to perform this inspection at the earliest opportunity, which was RFO-11 (April 26, 2003 to May 18, 2003) instead of waiting for a later inspection opportunity as allowed by the Order. The BMV examination revealed no evidence of recent boric acid leakage or RPV head degradation and was reported previously to the NRC on July 16, 2003 (Serial: HNP-03-070). The next BMV examination will be performed in RFO-14, which is scheduled to occur in the Fall 2007 in accordance with the Order.

IV.C.(5)(b) Nonvisual Nondestructive Examination (NDE)

During the recently completed RFO-13 (April 8, 2006 to May 16, 2006) at HNP, the reactor vessel head penetrations were examined to satisfy the requirements of the Order in Section IV.C.(5)(b) and to provide a baseline for future examinations. The examinations were conducted in accordance with written procedures and techniques that were demonstrated through the Electric Power Research Institute (EPRI) Technical Report 1007831, *Materials Reliability Program: Demonstrations of Vendor Equipment and Procedures for the Inspection of Control Rod Drive Mechanism Head Penetrations (MRP-89)* dated September 2003, and Westinghouse internal programs. The volume of the sixty-five penetration nozzles were examined using ultrasonic (UT) and eddy current (ET) methods, the interference zone was inspected with 0° UT techniques to assess whether flaws are present. In addition, the ID surface was examined with a supplemental eddy current technique. The reactor vessel head vent line and the associated J-groove weld were examined using eddy current methods. No evidence of PWSCC was identified by these examinations.

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IV.C.(5)(b) Nonvisual Nondestructive Examination (NDE) (continued)

The required coverage as defined in Section IV.C.(5)(b) of the Order has been achieved for all penetrations. The Order requires UT testing of each penetration from 2 inches above the highest point of the root of the J-groove weld to 2 inches below the lowest point at the toe of the J-groove weld on nozzle penetrations that have an operating stress level of 20 ksi tension or greater, or 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 on nozzle penetrations that have an operating stress level of less than 20 ksi tension. CRDM and head vent nozzle stress analysis was performed by Westinghouse Electric Corporation to determine the stress distribution. This calculation determined that stresses were below 20 ksi on all penetrations except penetration number one. Penetration number one was examined from 2 inches above the highest point of the root of the J-groove weld to 2 inches below the lowest point at the toe of the J-groove weld in accordance with the Order. All remaining penetrations were examined 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 as allowed by the Order. The vent line nozzle was examined for a distance of at least 3 inches above the top of the J-groove weld. The vent line weld surface coverage began at the ID of the nozzle and includes the tube end, the full width of the weld and 0.5 inch of the vessel head cladding. The full circumference of the weld was examined. No evidence of PWSCC was identified by these examinations.

IV.D Visual Inspection

A visual inspection of areas above the head to identify potential boric acid leaks from pressure-retaining components was also performed as required by Section IV.D of the Order. No evidence of leakage was identified by these inspections and no boron deposits were found.

Summary

In summary, the Harris Plant submits this letter in accordance with Section IV.E of the Order to report the results of the inspections required in Sections IV.C and IV.D of the Order. The inspections revealed no evidence of recent boric acid leakage or RPV head degradation.