

**VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261**

**November 9, 2004**

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
11555 Rockville Pike  
Rockville, Maryland 20852

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**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)**  
**NORTH ANNA POWER STATION UNIT 1**  
**ORDER EA-03-009 SIXTY-DAY REPORT**  
**INSPECTION RESULTS ABOVE THE REACTOR PRESSURE VESSEL HEAD**

On February 20, 2004 the NRC issued the First Revised Order (EA-03-009) establishing interim inspection requirements for reactor pressure vessel heads. In accordance with the Order's inspection and reporting requirements, this letter provides the results of the visual inspections performed to identify potential boric acid leaks from pressure-retaining components above the reactor pressure vessel head (RPVH) during the North Anna Unit 1 Fall 2004 refueling outage.

No boric acid leakage was identified during the inspection of the pressure-retaining components above the reactor pressure vessel head (RPVH) performed in Mode 3 at the start of the Fall 2004 refueling outage (R-17). However, during a maintenance activity associated with the RPVH insulation, boric acid was found during this outage at the base of penetration 53 (thermocouple nozzle). The source of this boric acid was a small leak at the thermocouple nozzle assembly connection identified during unit startup from the previous refueling outage (R-16, Spring 2003). The thermocouple connection was repaired, the penetration tube cleaned, a section of insulation was removed, and the accessible areas of the head inspected prior to returning the unit to operation following the 2003 refueling outage. Only minor rusting on the head was noted from water spilled during cleanup activities during refueling outage R-16. As noted above, no leakage was identified from the thermocouple nozzle assembly connection during the pressure boundary inspection performed in Mode 3 at the start of the Fall 2004 refueling outage. Based on isotopic analysis of the boric acid crystals removed, it was concluded that the source of the boric acid found on the head during this refueling outage (R-17) was from the thermocouple nozzle assembly connection leak that occurred during the preceding refueling outage, R-16. This RPVH was replaced during the Spring 2003 refueling outage.

The as-left condition of the head around penetration 53 following this outage (R-17) is as follows. The penetration tube above the insulation is clean. The penetration tube below the insulation was cleaned with steam and hot water. The tube below the

insulation shows about a 1/2" wide trail where the boric acid had been. After removing the boric acid crystals from the surface of the head, a narrow ring of minor rust remains around the penetration tube, about 1/8" radially near the high side of the tube, and extends around the tube then trails away from the tube on the low side. Where the rust trail extends away from the low side of the penetration tube, one pit (<1/4" diameter and <1/8" deep) was found, an estimated 1/2" away from the penetration tube. Rust trails were not detected outside the mirror insulation on the head, below the shroud.

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Very truly yours,



L. N. Hartz  
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Commitments made in this letter: None

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