

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

July 22, 2002

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555-0001

Serial No.: 02-333  
LR/MWH R0  
Docket Nos.: 50-280/281  
50-338/339  
License Nos.: DPR-32/37  
NPF-4/7

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)**  
**SURRY AND NORTH ANNA POWER STATIONS UNITS 1 AND 2**  
**ANNUAL UPDATE INFORMATION**  
**LICENSE RENEWAL APPLICATIONS**

By letter dated May 29, 2001 (Serial Number 01-282), Virginia Electric and Power Company (Dominion) submitted license renewal applications (LRA) for the Surry and North Anna Power Stations pursuant to 10 CFR Part 54. Section 54.21 requires Dominion to report changes to the current licensing basis (CLB) that materially affect the contents of the LRA, including the UFSAR supplement. These changes are required to be submitted each year and at least 3 months prior to the scheduled completion of the LRA review by the NRC.

Dominion has completed the annual review and concluded that there is one change that materially affects the content of the Surry Power Station LRA. That change involves the repairs to the reactor vessel head control rod drive penetrations. The attachment to this letter provides the details of the change and the effect on the content of the Surry LRA. No changes that materially affect the North Anna Power Station LRA were found.

The UFSAR supplements have also been revised. The revised UFSAR supplements for Surry and North Anna are attached to the Draft SER Response to Open Items and Confirmatory Actions, which are being sent to the NRC under a separate transmittal.

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Should you have any questions regarding this submittal, please contact Mr. J. E. Wroniewicz at (804) 273-2186.

Very truly yours,

A handwritten signature in black ink, appearing to read 'DACA', followed by a long horizontal flourish.

David A. Christian  
Senior Vice President – Nuclear Operations and Chief Nuclear Officer

Attachment

Commitments made in this letter: None



cc:

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**Attachment**

**License Renewal – Annual Update Information  
Serial No. 02-333**

**Surry and North Anna Power Stations, Units 1 and 2  
License Renewal Applications**

**Virginia Electric and Power Company  
(Dominion)**



### Modifications to the Surry Unit 1 Reactor Vessel Closure Head

The Surry LRA currently states in Section 3.1.2, Reactor Vessel, that carbon steel and low-alloy steel surfaces of the reactor vessel pressure boundary subcomponents in contact with borated water are clad with a weld overlay of stainless steel for corrosion control. LRA Table 3.1.2-1, Reactor Vessels, identifies the subcomponent Closure Head Dome and Flange (and cladding) as carbon steel and low-alloy steel exposed externally to air and borated water leakage. The stainless steel cladding is exposed to treated water internally.

#### **CLB Change:**

The Surry Unit 1 reactor vessel closure head has been modified to repair six control rod drive penetration sleeves. The repair resulted in a band of ferritic low-alloy steel closure head material being exposed to the treated (borated) water environment of the primary coolant system at these penetration locations. A detailed corrosion evaluation was performed for the material / environment created by this modification. This evaluation concluded that a conservative corrosion rate for the carbon steel and low-alloy steel material was 0.0032 inches/year.

Based on the thickness of the closure head and the specific location of the low-alloy steel exposure to primary coolant water, this rate of material removal is considered insignificant. This information was documented in the revised Relief Requests SR-27, 28, 32, and 33 included in Dominion letter Serial No. 01-637A, dated October 30, 2001. Based on this evaluation there is reasonable assurance that the pressure boundary function of the reactor vessel closure head will be maintained during the period of extended operation. As a result, no additional aging management activity other than the Chemistry Control Program for Primary Systems is required to manage the effect of loss of material for the low-alloy steel in the primary coolant water environment.

In addition, reactor vessel head and control rod drive penetration inspections are being conducted during each refueling outage. These additional inspections are a result of the concern for cracking due to PWSCC and wall loss due to boric acid deposits/leakage. These ongoing vessel head inspection activities undertaken as a result of NRC Bulletin 2001-01 will be monitored to determine the need for additional or augmented inspections. Furthermore, Dominion has initiated replacement of the reactor vessel heads for all four Surry and North Anna Units currently scheduled to be complete in 2005. This will restore cladding in the area of the penetrations and eliminate the carbon steel and low-alloy steel exposure to treated borated water internally for the reactor vessel.

**Changes to the Surry LRA:**

p. 3-12, Section 3.1.2 - Add "except for six Surry Unit 1 reactor vessel closure head control rod drive penetration locations" to identify that these locations are not clad.

p. 3-13, under **Aging Effects Requiring Management** - Add an item "Loss of material from un-clad carbon steel and low-alloy steel exposed to treated water environment."

p. 3-95, Table 3.1.2-1 - Add a material group line item for subcomponent Closure Head Dome and Flange for Carbon Steel and Low-alloy Steel in Treated Water (internal) with Loss of Material aging effect and Chemistry Control Program for Primary Systems as the aging management activity. Also, add a footnote referenced from the Aging Management Activity column entry as follows: "A detailed corrosion evaluation has been performed for the exposure of low-alloy steel closure head locations to treated (borated) water. This evaluation concluded that a conservative estimate of the corrosion rate is 0.0032 inches/year. This corrosion rate results in insignificant loss of material thickness for the period of extended operation and the pressure boundary function of the closure head will not be affected. "