

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

March 30, 1998

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20005

Serial No. 98-171  
SPS/CGL R1  
Docket Nos. 50-280  
License Nos. DPR-32

Dear Sir:

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**SURRY POWER STATION UNIT 1**  
**PART LENGTH CONTROL ROD DRIVE MECHANISM**  
**HOUSING LEAKAGE ISSUE**

Northern States Power Company recently identified a leak in a reactor vessel head penetration at Prairie Island Nuclear Station Unit 2. After further investigation of the leak, it was determined that the leak was at a dissimilar metal weld in a part length control rod drive mechanism (CRDM) housing. Surry Units 1 and 2 have been identified by the Westinghouse Owners Group (WOG) as potentially affected units. Virginia Electric and Power Company has been actively involved in the WOG activities associated with the part length control rod drive mechanism (CRDM) housing weld failure evaluation and development of proposed corrective actions. The WOG's technical assessment of the dissimilar weld issue and safety assessment were provided to the NRC in a WOG letter from Mr. R. A. Newton to Mr. F. J. Miraglia (Serial No. OG-98-037), dated March 6, 1998. The WOG investigation and safety assessment have reached the following conclusions:

- the Prairie Island flaw originated from weld fabrication and was not service induced,
- there was no evidence of additional flaw growth during service,
- nineteen part length CRDMs have been ultrasonically examined to date with only the Prairie Island flaw being identified,
- such weld fabrication flaws are extremely unlikely to be present based on fabrication inspection criteria,
- operating plants are sensitive to leakage, particularly reactor coolant system leakage,
- for a failure to occur, a significant flaw not previously identified must exist and an abnormal load would be required to cause the flaw to fail,
- a part length CRDM housing failure is bounded by existing safety analyses, and
- continued plant operation will not result in an increase in risk.

A March 6, 1998 WOG letter to affected utilities (Serial No. OG-98-038) summarized the issue and identified potential options. We are currently reviewing that information and will provide a future transmittal outlining an action plan to address the part length CRDM housing leakage issue for Surry Units 1 and 2.

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Consistent with the WOG recommendations, the purpose of this letter is to advise the NRC of activities undertaken relative to this issue during the ongoing Surry Unit 1 maintenance outage. We began a planned nine-day maintenance outage on March 20, 1998. The intent of this short planned maintenance outage was to perform specific equipment repairs or replacements (i. e., pressurizer manway leakage repair, PORV leakage repairs, reactor coolant pump motor replacement) to enhance plant reliability and eliminate plant conditions not consistent with our plant performance and operational standards. Because of the recent WOG recommendations on the part length CRDM housing leakage issue, we expanded the maintenance outage scope to include a "best effort" visual inspection of the reactor vessel head and penetration area. This inspection, which was capable of detecting boron deposits on the visually accessible, peripheral portions of the head and penetration area, was conducted on four of the five part length CRDM housings located near the periphery of the reactor head. The inspection did not reveal any evidence of part length CRDM housing leakage.

As noted above, we will provide a future transmittal outlining an action plan to address the part length CRDM housing leakage issue for Surry Units 1 and 2. Should you have any questions or require additional information, please contact us.

Very truly yours,



James P. O'Hanlon  
Senior Vice President - Nuclear

Commitments made in this letter:

1. We will provide a future transmittal outlining an action plan to address the part length CRDM housing leakage issue for Surry Units 1 and 2.

cc: United States Nuclear Regulatory Commission  
Regional Administrator - Region II  
Atlanta Federal Center  
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Mr. R. A. Musser  
NRC Senior Resident Inspector  
Surry Power Station