

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

April 14, 1998

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D. C. 20555

Serial No. 98-171A  
NLOS/ETS: R4  
Docket Nos. 50-338/339  
50-280/281  
License Nos. NPF-4/7  
DPR-32/37

Dear Sir:

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**SURRY POWER STATION UNITS 1 AND 2**  
**PART-LENGTH CONTROL ROD DRIVE MECHANISM HOUSING LEAKAGE**  
**PRELIMINARY ACTION PLAN**

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. Virginia Electric and Power Company has been actively involved in the Westinghouse Owners Group (WOG) activities associated with the part-length CRDM housing weld failure evaluation and 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,
- 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.

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Consistent with WOG recommendations, we are providing the NRC with Virginia Electric and Power Company's preliminary action plan to address the part-length CRDM housing dissimilar metal weld issue at both North Anna and Surry Power Stations. Considering the current outage schedules and the industry experience gained to date on this issue, Virginia Electric and Power Company plans to take the following actions.

#### **North Anna Unit 2 1998 Refueling Outage**

North Anna Unit 2 commenced a refueling outage on April 5, 1998. The current plans are to remove and cap four of the five part-length CRDM housings during the refueling. The fifth part-length CRDM housing contains the reactor head vent and will be replaced with a CRDM housing that has been verified fully acceptable by having had the dissimilar metal weld ultrasonically (UT) inspected. The removal and replacement activity is contingent on the availability of a qualified vendor and materials. Also, if engineering or nuclear safety concerns (e.g., design or analysis) are identified that would prevent the completion of the modification, we may revise our current action plan for Unit 2. Any change from the current action plan will be communicated to the NRC.

#### **North Anna Unit 1 and Surry Units 1 and 2 1998/1999 Refueling Outages**

Until the next refueling outage for each unit, currently scheduled to begin September 13, 1998 for North Anna Unit 1, October 19, 1998 for Surry Unit 1, and April 12, 1999 for SPS Unit 2, we will be actively involved in the WOG activities associated with investigation and disposition of the CRDM housing dissimilar metal weld issue. Based on the status of the WOG investigation and the industry experience subsequently gained, action plans will be developed for implementation during the next refueling outage for each unit. These action plans will be communicated to the NRC prior to the upcoming outages.

Note that, during a recently completed Surry Unit 1 maintenance outage, a "best effort" visual inspection of the visually accessible, peripheral portions of the head and penetration area was completed. The inspection did not reveal any evidence of leakage. These results were communicated to the NRC in a March 30, 1998 letter (Serial No. 98-171).

#### **Heightened Awareness to Reactor Coolant System Leakage**

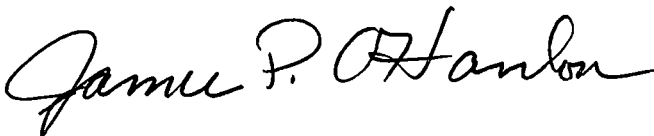
Until a comprehensive corrective action plan (e.g., qualified inspection, replacement, or evaluation and disposition based on industry experience) can be completed, Reactor Coolant System (RCS) leakage monitoring awareness has been heightened at both North Anna and Surry. Heightened RCS leakage monitoring awareness has been accomplished through required reading by the Operations staff at both stations. The required reading identified the Prairie Island leakage event and noted that relevant parameters must be closely monitored.

In addition to these actions to heighten awareness, the following actions are already in place at each station to facilitate sensitivity to RCS leakage monitoring:

- A daily evaluation of primary system leakage is performed for each unit.
- If an increasing trend exists in containment parameters associated with Reactor Coolant System leakage, a containment entry is made in accordance with procedure to check for visible leakage in a number of areas, including the reactor cavity/head area.

Should you have 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. North Anna Unit 2 - The current plans are to remove and cap four of the five part-length CRDM housings during the refueling. The fifth part-length CRDM housing contains the reactor head vent and will be replaced with a CRDM housing that has been verified fully acceptable by having had the dissimilar metal weld ultrasonically (UT) inspected. Any change in the action plan will be communicated to the NRC.
2. Action plans will be developed for implementation during the refueling outage for each unit (North Anna Unit 1 and Surry Units 1 and 2). The action plans will be communicated to the NRC prior to the upcoming outages.

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