

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

January 18, 1991

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

Serial No. 91-027  
NL&P/JBL:jbl R4  
Docket No. 50-338  
50-339  
License No. NPF-4  
NPF-7

Gentlemen:

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**CONFERENCE CALL REGARDING PROPOSED LICENSE AMENDMENT**  
**AND COMMITMENT ON INSIDE RECIRCULATION SPRAY PUMPS**

A telephone conference call was held on January 15, 1991 between Virginia Electric and Power Company and members of the NRC staff to discuss a proposed license amendment for North Anna Unit 2 submitted October 29, 1990. The amendment proposes to delete License Condition 2.C.(15)(c) which requires at least once every five years that the recirculation spray pumps inside containment be removed and inspected and the bearings replaced if necessary.

As noted in the October 29, 1990 letter, we had previously committed to similar inspections of the Unit 1 inside recirculation spray pumps. We also indicated our intent to change our commitment and no longer conduct the Unit 1 inspections. However, we requested that the NRC review our change proposal such that we could resolve any questions or concerns prior to eliminating the inspections from the current Unit 1 outage scope. Thus, the purpose of conference call was to discuss the license condition change request with the NRC reviewer and resolve any questions.

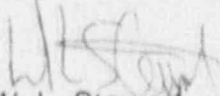
Based on this telephone conference call and subsequent communications with the NRC North Anna Project Manager, we consider the NRC's concerns to be addressed. Therefore, we are changing our commitment and will no longer be conducting inspections of the Unit 1 inside recirculation spray pumps. Full-flow testing of the pumps in accordance with our ASME Section XI inservice testing program will continue to be performed.

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As requested by the NRC North Anna Project Manager, a summary of the January 15, 1991 telephone conference call is attached. Should you require any additional information, please contact us.

Very truly yours,



W. L. Stewart  
Senior Vice President - Nuclear

Attachment

cc: U.S. Nuclear Regulatory Commission  
Region II  
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Mr. M. S. Lesser  
NRC Senior Resident Inspector  
North Anna Power Station

**Summary of the Telephone Conference Call  
on January 15, 1991  
Between the NRC and Virginia Electric and Power Company**

Purpose

By letter dated October 29, 1990, Virginia Electric and Power Company submitted a proposed amendment request to delete the License Condition 2.C.(15)(c) for Unit 2 which requires the inside containment recirculation spray pumps to be disassembled and inspected every five years. The purpose of conference call was to discuss the change request and resolve any NRC questions or concerns prior to eliminating the similar inspections from the current Unit 1 refueling outage scope.

As noted in the October 29, 1990 letter, we had previously committed to disassemble and inspect the Unit 1 inside recirculation spray pumps similar to the Unit 2 license condition. We also indicated our intent to change this commitment and no longer conduct the Unit 1 inspections. However, we requested that the NRC review our change proposal so that we could resolve any questions or concerns prior to eliminating the inspections from the current Unit 1 outage scope. Thus, the purpose of conference call was to discuss the license condition change request with the NRC reviewer and resolve any questions. The following is a summary of the January 15, 1991 telephone conference call.

Summary

- 1) **Why had the inside recirculation spray pumps on both units not been full-flow tested prior to the 1987 outages?**

The licensee responded by stating that the NRC had approved Revision 3 of the North Anna Inservice Testing (IST) program which did not require full-flow testing of these pumps. [Subsequent to the call, it was confirmed that the NRC provided interim approval of our program and the referenced relief requests by letter dated September 26, 1985.] Such testing required the erection of a temporary dike around the containment sump to make it possible to flow test the pumps. The system design does not provide easy implementation of that capability.

- 2) **Why are the inside recirculation spray pumps now flow tested?**

On March 25, 1987 we requested relief (Relief Request No. 6) for the bearings not to be optically aligned following the disassembly/inspection of the pumps. On February 18, 1988, NRC issued final approval of Relief Request No. 6, which granted the requested relief provided that the refueling outage flow testing be performed. Erection of a temporary dike to support full-flow testing was subsequently implemented as necessary and flow testing conducted.

3) **How many times have the pumps been flow tested?**

The licensee responded that, as described in the October 29, 1990 letter, the pumps were full-flow tested as follows:

- i) the North Anna Unit 1 "A" and "B" pumps were full-flow tested during the 1989 refueling outage and will be full-flow tested during the current 1991 outage, and
- ii) the North Anna Unit 2 "A" and "B" pumps were full-flow tested during the 1987, 1989, and 1990 refueling outages.

In addition, each of the pumps have also been pre-operationally tested.

Finally, the licensee emphasized that each time the pumps had been flow tested, the flow rate and pressure were on the pump test curve indicating no pump performance degradation and thus supporting the determination not to disassemble the pumps.

4) **How many times had the pumps been disassembled and inspected previously?**

The pumps have been previously disassembled as follows:

North Anna Unit 1

"A" Pump: 1979 Refueling Outage, 1989 Refueling Outage

"B" Pump: 1979 Refueling Outage

North Anna Unit 2

"A" Pump: 1982 Refueling Outage, 1987 Refueling Outage

"B" Pump: 1982 Refueling Outage, 1987 Refueling Outage

5) **Describe the results of those disassembly / inspections.**

The pump internals were visually inspected for debris, cracking, scoring, shaft bow, and bearing and bearing journal scoring and wear. There was no significant degradation of the pumps or the pump bearings identified during the inspections.

It was explained that degradation of the pumps is not expected because the pumps are run so infrequently. The pumps are "dry bump" tested quarterly and the pumps are flow tested on a refueling outage frequency. The "dry bump" test results in the pumps being run dry for less than 30 seconds each time.

It was also explained that the bearings are very hard, brittle material and that the maintenance activity of disassembling the pumps typically caused damage to the bearings resulting in their required replacement.



- 6) The NRC's SER for North Anna Power Station (NUREG-0053, Supplements 9 and 10) describe extensive testing and modal analysis of the outside containment recirculation spray pumps. Discuss the similarity of the inside and outside recirculation spray pumps.

The design of the pumps is similar in that they are both vertical turbine pumps. However, the outside recirculation spray pumps has 1) a 60 ft. long pump shaft and 2) a recirculation flow test path can be aligned by valve manipulation. The inside recirculation spray pumps take suction directly on the containment sump and, therefore, a dike must be built inside containment to provide a suction source and the discharge piping must be physically realigned to create a recirculation flow test path. The shaft length of the inside containment pump is also much shorter than the outside containment pump, i.e., approximately 10 ft.

The similarity in the bearing design and material and the differences in wear characteristics caused by the length of the outside recirculation spray pump shaft was also discussed.