VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 15, 1990

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. 89-548
NO/JZL:
Docket Nos. 50-280
50-281
50-338
50-339
License Nos. DPR-32
DPR-37
NPF-4
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
NORTH ANNA POWER STATION UNITS 1 AND 2
NRC BULLETIN NO. 89-02: STRESS CORROSION CRACKING OF HIGH-HARDNESS TYPE 410 STAINLESS STEEL INTERNAL PRELOADED BOLTING IN ANCHOR DARLING MODEL S350W SWING CHECK VALVES OR VALVES OF SIMILAR DESIGN

NRC Bulletin No. 89-02 advises recipients of the potential failure of Anchor Darling Model S350W swing check valves due to stress corrosion cracking (SCC) of internal preloaded bolting. The components within the Anchor Darling valve susceptible to SCC are the retaining block studs, made of ASTM A193 Grade B6 Type 410 stainless steel. As a result, the NRC has requested that licensees inspect applicable safety-related Anchor Darling check valves to determine if the retaining block studs are susceptible to SCC and/or if cracking has occurred.

Virginia Electric and Power Company uses Anchor Darling Model S350W swing check valves at both North Anna and Surry Power Stations. For both stations, the Anchor Darling check valve is used to isolate the safety injection accumulators from the reactor coolant system cold leg. Two valves in series are used for each of the three accumulators at each of four units, for a total of 24 valves. In addition, Surry Unit 2 has an Anchor Darling check valve located in the residual heat removal line which connects to the loop B safety injection accumulator discharge line. This last valve is unique to Surry Unit 2, thus, there are a total of 25 Anchor Darling Model S350W swing check valves for both stations.

Virginia Electric and Power Company was aware of the potential failure of Anchor Darling retaining block studs prior to receiving NRC Bulletin 89-02. The Company had been informed of this issue through NRC Information Notice No. 88-85, "Broken Retaining Block Studs on Anchor Darling Check Valves," and by letter from Westinghouse Electric Corporation. In response to the above information, Virginia Electric and Power Company replaced the studs in the 25 Anchor Darling Model

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S350W swing check valves. The replacement studs were of a new material recommended by Anchor Darling, ASTM A564-630-1100, which is not Type 410 stainless steel. Therefore, while Virginia Electric and Power Company does use the Anchor Darling Model S350W swing check valve, none of the valves are susceptible to the failure described in Bulletin 89-02. While no specific examination of the original retaining block studs was performed, no obvious defects or broken studs were noted.

We also evaluated other check valves used at our nuclear power stations to determine if a similar concern might exist for other valves. We have determined that Velan check valves, Models B10-3114B-13MS and B14-3114B-13MS, may use ASTM A193 Grade B6 material for the hanger bracket bolts. The hanger bracket bolt in the Velan valve is analogous to the retaining block stud in the Anchor Darling valve. Velan check valves are used at both North Anna and Surry Power Stations in the chemical and volume control system and the safety injection system. We identified 50 potentially applicable Velan check valves at North Anna Power Station and 47 applicable Velan check valves at Surry Power Station. Component drawings for the Surry Power Station show the hanger bracket bolt as ASTM A193 Grade B6. Component drawings for the North Anna Power Station, which are a later revision, show the hanger bracket bolt as ASTM A193 Grade B8. ASTM A193 Grade B8 is not a Type 410 stainless steel and is therefore not susceptible to the SCC failure discussed in Bulletin 89-02. Accordingly, we consider the Velan check valves at Surry Power Station to be within the scope of NRC Bulletin 89-02, while the Velan check valves at North Anna Power Station are not.

In accordance with NRC Bulletin 89-02, the safety-related Velan check valves at Surry Power Station which may contain Type 410 hanger bracket bolts will be inspected at the next available refueling outage of each unit. The Type 410 hanger bracket bolts will be replaced with non-Type 410 bolting. The results of our inspection will be provided to the NRC within 60 days of completion, as required by Bulletin 89-02. We also intend to inspect a portion of the Velan check valves installed at North Anna Power Station, to confirm that non-Type 410 hanger bracket bolts were used. No additional reporting requirements are expected for the North Anna Power Station. If it is later determined that the North Anna Velan check valves are within the scope of Bulletin 89-02, we will notify the NRC at that time.

Should you have any questions concerning this submittal, please contact us.

Very truly yours,

W. L. Stewart
Senior Vice President - Nuclear

cc: U. S. Nuclear Regulatory Commission
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COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by W. L. Stewart who is Senior Vice President - Nuclear, of Virginia Electric and Power Company. He is duly authorized to execute and file the foregoing document in behalf of that Company, and the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 15TH day of January, 1990.

My Commission Expires: February 25, 1990.

Vicki L. Hull
Notary Public

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