VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

D. S. CRUDEN
VICE PRESIDENT-NUCLEAR

June 3, 1988

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

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Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNITS 1 AND 2
RESPONSE TO GENERIC LETTER 88-05

NRC Generic Letter 88-05, Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants, requests licensees to provide assurances that a program has been implemented at their facilities to ensure that boric acid corrosion due to leakage will not lead to degradation of the Reactor Coolant Pressure Boundary. This program is to include the following items:

1) Determination of the principal locations where leaks may occur and cause significant boric acid corrosion of the primary pressure boundary.

2) Procedures for locating small coolant leaks (i.e., leakage rates at less than technical specification limits).

3) Methods for conducting examinations and performing engineering evaluations to establish the impacts on the RCS pressure boundary when leakage is located.

4) Corrective actions to prevent recurrences of this type of corrosion.

North Anna Power Station presently has in place or is developing appropriate procedural controls to address each of the above items. The following describes the activities that are in place or are being developed:

1) Visual examinations are performed of pressure retaining components to identify leakage sources which may cause boric acid corrosion. In response to NRC Bulletin 82-02, Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of PWR Plants, reactor coolant pressure boundary closures with threaded fasteners are

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inspected each refueling outage. Specific areas of the plant that are required to be inspected include the steam generator manway bolting, loop stop valves, loop stop bypass valves, reactor coolant pump casing and seal housing, pressurizer manway bolting, residual heat removal system isolation valves, SI accumulator discharge valves, safety injection to the loops, and pressurizer safety valves. In addition, during the required primary system hydrostatic test which is performed following a refueling outage, the reactor coolant system is inspected for coolant leaks which could lead to boric acid buildup. Specific areas addressed in this inspection include reactor coolant pump seals, RTD welds, valve packing glands, boundaries and components where maintenance was performed, and the reactor vessel flange and conoseal area.

2) Procedures for locating small reactor coolant system leaks are in place and performed every refueling outage and during unit startup from a refueling outage as discussed above. Also, prior to performing maintenance, routine practice is to visually inspect components for evidence of boric acid leakage or corrosion. In addition, a new procedure is being developed to inspect for reactor coolant system leakage during each cold shutdown prior to decontaminating the containment, as well as each reactor startup from Mode 5. The procedure will also be performed, subject to ALARA and personnel safety considerations, whenever unidentified reactor coolant system leakage increases by more than a specified amount from that at the time of the last walkdown or leakage increases above a predetermined value which is much less than the Technical Specification limit. For each identified leak, the source of the leakage, potential leakage pathways, and affected components will be determined and recorded. Affected components will be examined and an engineering evaluation of the effects of the leakage will be performed by station personnel. This procedure will be in place by July 30, 1988.

3) A new procedure (which is also discussed in section 2 above) is being developed which will formally control the examination and evaluation of the effects of leakage on the reactor coolant system boundary and safety-related components. (Presently such evaluations are being performed when leakage is identified.) The current as well as long term consequences of the leakage will be evaluated. Recommendations for continued service with the leakage will be monitored by station engineering for follow-up evaluation as necessary. Corrective actions to prevent recurrence of the leakage or the effects of the leakage will be evaluated. This procedure will be in place by July 30, 1988.

4) Corrective actions to prevent recurrence of leakage or the effects of leakage are evaluated for each identified leak. In addition, a procedure is being developed to log reactor coolant system leakage events and affected components based on the data collected during periodic inspections described in item 2. This data will be periodically evaluated to determine the need for additional corrective actions. This procedure will be in place prior to the next scheduled refueling outage.

An example of corrective action that is being taken to reduce leakage is our current valve packing betterment program in which valve packing throughout the plant is being replaced. The program employs state-of-the-art materials and "live-loading" applications, when applicable.

The information provided in this response is true and accurate to the best of my knowledge. If you have any further questions, please contact us.

Very truly yours,

D. S. Cruden

cc: U. S. Nuclear Regulatory Commission
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Mr. J. L. Caldwell
NRC Senior Resident Inspector
North Anna Power Station

COMMONWEALTH OF VIRGINIA )
)
CITY OF RICHMOND )

The foregoing document was acknowledged before me, in and for the City and Commonwealth aforesaid, today by D. S. Cruden who is 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 3 day of June, 1988.

My Commission expires: February 10, 1989.

Carolyn McMillan
Notary Public

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