VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 21, 2000

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

Serial No. 00-029
NL&OS/ETS R0
Docket No. 50-338
License No. NPF-4

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 1
THIRD TEN YEAR INSERVICE INSPECTION PROGRAM
REVISED RELIEF REQUESTS SPT 1, 5, AND 8

In an April 8, 1999 letter (Serial No. 99-169), Virginia Electric and Power Company submitted the inservice inspection (ISI) program for the third ten-year inservice inspection interval for North Anna Unit 1 for Class 1, 2 and 3 components and component supports. This program was written in accordance with the requirements of the 1989 Edition of Section XI of the ASME Boiler and Pressure Vessel Code. However, North Anna Unit 1 was not originally designed to completely meet the detailed inservice inspection requirements of Section XI. Therefore, we requested relief from certain inspection and testing requirements, which have been determined to be impractical.

In a January 11, 2000 telephone conference call, the proposed alternative examination requirements for several relief requests were discussed with the NRC staff. The information discussed in that telephone conference call has been incorporated into the subject relief requests. The revised relief requests are included in the attachment to this letter for your review.

The revised relief requests have been reviewed and approved by the Station Nuclear Safety and Operation Committee.

There are no new commitments in this letter. If you need any additional information, please contact us.

Very truly yours,

Leslie N. Hartz
Vice President - Nuclear Engineering and Services

Attachment

A047

cc: U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth Street, SW
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Atlanta, Georgia 30303

Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

Attachment 1

North Anna Unit 1 Inservice Inspection Program
Class 1, 2 and 3 Components and Component Supports
Third Inservice Inspection Interval
Revised Relief Requests SPT 1, 5, and 8

Virginia Electric and Power Company
North Anna Power Station Unit 1

Virginia Electric and Power Company
North Anna Power Station Unit 1
Third Ten Year Interval

RELIEF REQUEST SPT-1

I. IDENTIFICATION OF COMPONENTS

System: Reactor Coolant (RC)

Components: Partial Penetration Welds @ Bottom of Reactor Vessel

ISI Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Section XI of the ASME Boiler and Pressure Vessel Code, 1989 Edition, Category B-E, Item No. 4.13, requires reactor vessel partial penetration welds to have a visual (VT-2) examination during the system hydrostatic test of IWB-5222; in addition, Category B-P, Item Nos. B15.10, and B15.11 require a visual (VT-2) examination of the bottom of the reactor vessel during the system leakage test of IWB-5221 and during the system hydrostatic test of IWB-5222, respectively.

III. BASIS FOR RELIEF

In order to meet the Section XI pressure and temperature requirements for the system leakage and system hydrostatic tests of the reactor vessel, the reactor containment at North Anna Unit 1 is required to be at a subatmospheric pressure. Station administrative procedures require that self contained breathing apparatus be worn for containment entries under these conditions. This requirement significantly complicates the visual (VT-2) examination of the bottom of the reactor vessel during testing. Access to the bottom of the reactor vessel requires that the examiner descend several levels by ladder and navigate a small entrance leading to the reactor vessel. In addition to these physical constraints, the examiner must contend with extreme environmental conditions: elevated air temperatures due to reactor coolant at temperatures above 500 degrees F and limited air circulation in the vessel cubicle. In addition, the examiner is limited to the

approximate 30 minute capacity of the breathing apparatus for containment entry, the VT-2 examination, and containment exit.

IV. ALTERNATE TESTING

Technical Specifications require that the Reactor Coolant System Leak Rate be limited to 1 gallon per minute unidentified leakage. This value is calculated at least once per 72 hours. Additionally the containment atmosphere particulate radioactivity is monitored every 12 hours. The incore sump room has a level alarm in the control room requiring operator action. These actions would identify any integrity concerns associated with this area. A VT-2 examination will be conducted when containment is at atmospheric conditions each refueling for evidence of boric acid corrosion.

Virginia Electric and Power Company
North Anna Power Station Unit 1
Third Ten Year Interval

RELIEF REQUEST SPT-5

I. Identification of Components

Pressure retaining bolted connections within the scope of ASME Section XI.

II. Code Requirements

Per ASME Section XI, Division 1, 1989 Edition, paragraph IWA-5250(a)(2), when leakage is detected during the conduct of a system pressure test at a bolted connection, the bolting shall be removed and subjected to a VT-3 examination to detect evidence of corrosion, and evaluated in accordance with paragraph IWA-3100.

III. Basis for Relief

Using Code Case N-566-1 in lieu of Section XI of the ASME Boiler and Pressure Vessel Code, 1989 Edition, IWA-5250(a)(2) allows for greater flexibility and prudent decision making. Leaking conditions at a bolted connection may be an important variable in the degradation of fasteners. However, leakage is not the only variable, and in some cases may not be the degradation mechanism. Other variables to be considered are: bolting materials; leaking medium; duration of the leak; and orientation of the leak (not all bolts may be wetted). These variables are important to consider before disassembling a bolted connection for a visual VT-3 examination. Removal of bolting at a mechanical connection may not be the most prudent decision and may cause undue hardship without a compensating increase in the level of quality or safety.

IV. Proposed Alternate Requirements

Code Case N-566-1 shall be implemented in it's entirety.

NOTE: If this relief request is approved, then Relief Request SPT-6 shall be considered as withdrawn. If this relief request is not approved, then please consider Relief Request SPT-6 as an alternative, and this Relief Request shall be considered as withdrawn.

Virginia Electric and Power Company
North Anna Power Station Unit 1
Third Ten Year Interval

RELIEF REQUEST SPT-8

I. IDENTIFICATION OF COMPONENTS

System: Reactor Coolant (RC)
Charging (CH)
Safety Injection (SI)

Components: Pressure retaining bolted connections located inside containment which are normally tested in subatmospheric conditions.

ISI Class: 1 and 2

II. CODE REQUIREMENTS

Subparagraph IWA-5242(a); For systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections for visual examination VT-2.

III. BASIS FOR RELIEF

A majority of these systems are located inside of containment. In cases where there is no intermediate isolation from the RC system, the system pressure test is performed when the RC system is greater than 500 degrees F, and the containment is subatmospheric. Removing and reinstalling insulation under these conditions is difficult to perform and deemed impractical when compared to the remainder of the Pressure Testing Program. Further, in our response to IE Bulletin 82-02 we agreed to examine pressure retaining bolting on lines 4 inch NPS and larger each refueling. In addition, in our response to NRC Generic Letter 88-05, Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants, we committed to performing a visual examination of all accessible portions of systems containing boric acid anytime the unidentified leak rate exceeds a predetermined value, at every cold shutdown prior to decontaminating the containment, and during every reactor startup from Mode 5. Therefore, the requirement in

IWA-5242(a) is a burden with no compensating increase in safety.

This relief was previously approved for Surry Power Station Unit's 1 and 2, reference NRC Letter Nos. 95-404 dated 7/19/95 and 95-480 dated 8/30/95, respectively, and North Anna Power Station Unit 2, reference NRC Letter No. 92-730, dated 11/5/92.

II. PROPOSED ALTERNATIVE

As an alternative to the Code requirements, pressure retaining bolted connections on Class 1 systems tested during subatmospheric conditions, and within the scope of Section XI, will be visually examined each refueling outage at zero or static pressure. The examination will be performed with the insulation removed.

Pressure retaining bolted connections on Class 2 systems tested during subatmospheric conditions, and within the scope of Section XI, will be visually examined each inspection period at zero or static pressure. The examination will be performed with the insulation removed.

The Code required pressure testing will continue to be performed with a VT-2 examination performed with the insulation in place. For the system pressure test associated with plant start up, the system shall be held at nominal operating pressure for at least 4 hours for insulated systems and 10 minutes for noninsulated systems before performing the VT-2 visual examination.