VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA 23261

April 15, 1996

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

Serial No.	96-160
NAPS/MPW/MAE	R4
Docket Nos.	50-338
	50-339
License Nos.	NPF-4
	NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNITS 1 AND 2
INSPECTION REPORT NOS. 50-338/96-01 AND 50-339/96-01
REPLY TO A NOTICE OF VIOLATION

We have reviewed your letter of March 21, 1996, which referred to the inspection conducted at North Anna Power Station from January 14 through February 24, 1996, and the associated Notice of Violation which was reported in Inspection Report Nos. 50-338/96-01 and 50-339/96-01. Our reply to the Notice of Violation is attached.

If you have any further questions, please contact us.

Very truly yours,

James P. O'Hanlon

James P. O'Hanlon
Senior Vice President - Nuclear

Attachment

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Mr. R. D. McWhorter
NRC Senior Resident Inspector
North Anna Power Station

JE01

REPLY TO A NOTICE OF VIOLATION
INSPECTION REPORT NOS. 50-338/96-01 AND 50-339/96-01

NRC COMMENT

During an NRC inspection conducted on January 14 through February 24, 1996, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG 1600, the violation is listed below:

> 10 CFR 50, Appendix B, Criterion III, as implemented by Operational Quality Assurance Program Topical Report VEP-1-5A, Updated Final Safety Analysis Report Section 17.2.3, Design Control, collectively require that measures be established to assure that applicable regulatory requirements and the nuclear power station design bases are correctly translated into the company specifications, drawings, procedures, and instructions applicable to modifications.
>
> Contrary to the above, on February 13, 1996, it was identified that six blowout panels for both units' incore instrument tunnels had been modified by installing hasps and locks without appropriate design controls. Additionally, several containment cubicle door panels had been modified by tack welding their sheet metal covers. These modifications were not reviewed prior to installation to assure their compliance with design bases assumptions contained in the Updated Final Safety Analysis Report, sections 6.2.1.3.2.3 and 6.2.1.3.2.5, and existed for an extended time period during the past operating cycles.
>
> This is a Severity Level IV violation (Supplement I).

REPLY TO NOTICE OF VIOLATION

1. REASON FOR THE VIOLATION

The reason for the violation was a failure to recognize that modifications made to the steam generator and pressurizer cubical doors and the incore instrumentation tunnel were modifications that affected safety features described in the UFSAR.

The UFSAR describes the blowout panels for the steam generator and pressurizer cubical doors as "blowout sheet metal panels fastened by six sheet metal screws to the frame of a locked wire grid door." The UFSAR also states that these blowout panels are designed to blow out at 2.5 psid.

As a result of repeated failures of the sheet metal screws, the blowout panels were stitch welded to the door frames of the steam generator and pressurizer cubicles. In addition, the latching mechanism on the pressurizer cubicle door had been removed. These changes invalidated the description in the UFSAR.

The UFSAR describes six blowout panels in the incore instrumentation tunnel access housing that are attached by hinges and closed during normal operation. These blowout panels are displaced by a pressure differential of 0.25 psid to allow air flow from the incore instrumentation tunnel to the containment during a design basis accident.

The Unit 1 incore instrumentation tunnel blowout panels were discovered locked closed (i.e., hasp welded to frame and padlocked) during the recent Unit 1 refueling outage. These locks were installed, approximately 15 years ago, to prohibit unauthorized access into a very high radiation area following several industry overexposures in the area beneath the reactor vessel. (Reference Information Notice issued by the NRC, IEIN 82-51, Overexposures in PWR Cavities.)

2. CORRECTIVE STEPS WHICH HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

The Unit 1 steam generator cubical doors were restored to their original design configuration (i.e., the welds on the blowout panels were ground off and the blowout panels were attached to the door frames with six sheet metal screws) during the recent refueling outage. A structural evaluation was performed to determine if the welded blowout panels would be displaced during accident conditions. A pressure differential of 2.5 psid was used and a configuration of two inch welds every twelve inches around the perimeter of the doors was assumed. This weld configuration is more conservative than the as-found condition. It was determined that the welded blowout panels on the steam generator cubical doors would not have caused the steam generator cubicle to become over pressurized.

As previously discussed, the latching mechanisms on the pressurizer cubicle doors on Units 1 and 2 were found to be removed. Therefore, the pressurizer cubical doors will now open with a much lower pressure differential than the 2.5 psid discussed in the UFSAR. The existing configuration of the pressurizer cubical doors meets the design basis requirements for the blowout panels. Therefore, no changes will be made to the Unit 1 and 2 pressurizer cubicle doors or their associated blowout panels.

After the identification of the Unit 1 incore instrumentation tunnel blowout panels being locked closed, a containment entry was made to remove the locks on the Unit 2 incore instrumentation tunnel blowout panels. This action restored the functionality of the blowout panels to their original design configuration.

During the Unit 1 refueling outage, the incore instrumentation tunnel blowout panels were functionally tested. Bars were installed on the inside of the blowout panel frames which allowed the removal of the locks, while still preventing unauthorized entry.

An evaluation was done to determine the pressure at which the hasps on the incore instrumentation tunnel blowout panels would have failed. The maximum equivalent failure pressure of the hasps removed from containment was 2.4 psid. However, the 2.4 psid equivalent failure pressure of the hasps exceeds the UFSAR displacement pressure of 0.25 psid.

Therefore, an evaluation was performed to determine the effect of the delayed blowout panel opening on the incore instrumentation tunnel subcompartment analysis. The evaluation determined that the pressure differential experienced in the incore instrumentation tunnel during a design basis accident would be approximately equal to the opening pressure differential for the blowout panels. Had a design basis accident occurred while the locks were installed on the blowout panels, the blowout panels would have opened before the subcompartment pressure exceeded the incore instrumentation tunnel design criteria.

This event was discussed with station personnel during a recent Human Performance Stand Down Day.

3. CORRECTIVE STEPS WHICH WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

As previously discussed, it was determined that the welded blowout panels on the steam generator cubical doors would not have caused the steam generator cubicles to become over pressurized. However, the Unit 2 steam generator cubical doors will be restored to their original design configuration and bars will be installed on the inside of the Unit 2 incore instrumentation tunnel blowout panel frames during the next refueling outage, which is currently scheduled for September 1996.

UFSAR changes have been initiated to revise the description of the pressurizer cubical doors and the incore instrumentation tunnel blowout panels, as well as addresses the recent modifications to the incore instrumentation tunnel blowout panel frames.

The Augmented Inservice Inspection Manual will be revised to properly inspect the incore instrumentation tunnel blowout panels.

A Training Information Bulletin will be issued to all nuclear personnel emphasizing the importance of ensuring UFSAR compliance when performing all types of maintenance and design change activities.

4. THE DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance has been achieved.