

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

W. L. STEWART  
VICE PRESIDENT  
NUCLEAR OPERATIONS

July 31, 1984

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Serial No: 431  
NO/JDH/lms  
Docket Nos. 50-338  
50-339  
License Nos. NPF-4  
NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY  
NORTH ANNA POWER STATION UNIT NOS. 1 AND 2  
10 CFR 50.48 APPENDIX R REANALYSIS

On July 3, 1984, in Bethesda, Maryland, we met with representatives of your staff and an NRC Region II representative to advise them on the status of Vepco's Appendix R Fire Protection Program for the North Anna Power Station. At that time, we described our Appendix R reanalysis effort and the resources involved. We also expressed our concern regarding the resources and input required to complete the effort and acknowledged our inability to complete all identified modifications on the schedules which we had previously submitted. We noted that, due to recent NRC clarifications, our reanalysis effort was still underway resulting in additional modifications beyond those already formally identified in our May 1, 1984 submittal (Serial No. 231). We outlined our plans for resolving these concerns by establishing new priorities and schedules to complete the work associated with Appendix R in an integrated, well-managed, and quality manner.

The Attachments to this letter provide you with lists of those modifications and the revised schedules. Please note that minor changes in the information presented at the July 3 meeting have occurred and are highlighted in the Attachments.

The modifications and schedules are broken down into three categories. Attachment I lists those modifications that will be completed prior to restart of each unit from its 1984 refueling outage. Attachment II lists those modifications that will be completed prior to January 31, 1985. Compensatory measures for each of those modifications are specified. Attachment III lists those modifications which will be completed during each unit's next refueling outage (i.e., the outage following the 1984 refueling outage). Compensatory measures for each of those modifications are also specified. In all cases, the corresponding compensatory measures will remain in effect until the modification is completed.

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As also discussed in the July 3, 1984 meeting, it was our intent to submit a schedular exemption for any modifications for which the schedules in 10 CFR 50.48 (c) were still applicable. The applicable modifications are those listed in Attachment III. A request for exemption is being forwarded separately.

On July 19, 1984 in Bethesda, Maryland, we again met with members of the NRR staff to advise them on our proposed long-term modifications resulting from our analyses of spurious operations and ventilation. A number of potential compensatory measures were also discussed. As stated during that meeting, we will be preparing additional descriptions of modifications and exemption requests pertaining to spurious operations and ventilation. It is our intent to submit this information to the NRC by October 15, 1984. This submittal will be in the form of an update to Chapters 6 and 7 of the North Anna 10 CFR 50 Appendix R report, submitted May 1, 1984 (Serial No. 231).

There are two other ongoing activities related to the Appendix R program at North Anna that we believe are appropriate to keep you informed of. They are discussed below.

#### Completion of Appendix R Reanalysis for North Anna

The ongoing Appendix R reanalysis effort for North Anna is scheduled to be completed by startup of Unit 1 (currently scheduled for August 12, 1984) and submitted to you by February 28, 1985. However, we plan to assess all design changes made since the start of the reanalysis effort (October 1983) for compliance to Appendix R as well as update the North Anna Fire Hazards Analysis. The Vepco Nuclear Design Control Program will be revised to ensure all future design changes are developed in compliance with Appendix R. In the interim, design changes will be reviewed by our current Appendix R consultant for compliance with Appendix R. A preliminary assessment will be made prior to startup of each unit. Any additional areas of concern identified after Unit 1 startup will be reported to the NRC in accordance with normal reporting procedures.

#### Training

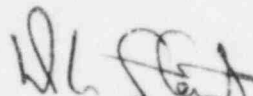
Initial training sessions will be conducted prior to startup for each unit on the procedures governing compliance with Appendix R. More detailed training will be integrated into the ongoing station training programs. Also, the training programs will be updated as subsequent modifications are completed.

VIRGINIA ELECTRIC AND POWER COMPANY TO Harold R. Denton

In summary, we believe that the priorities and schedules we have established will result in our compliance with Appendix R in the most direct and effective manner while maintaining both quality and safety in the operation of North Anna. We also believe that the July 3, 1984 meeting with your staff was very productive toward that end, and we intend to maintain active communications with you on this important issue.

Should you have questions or need additional information, please contact us.

Very truly yours,



W. L. Stewart

Attachments

cc: Mr. James P. O'Reilly  
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## ATTACHMENT I

Attachment I lists those modifications which will be completed during the current 1984 North Anna refueling outages.

It should be noted that the Power Source modification identified in Attachment I will be completed during the current Unit 1 outage with the exception that a final tie-in to a redundant Unit 2 power supply will be completed early into the Unit 2 outage. The power supply from Unit 1 is available. Currently scheduled restart for Unit 1 is August 12, 1984; currently scheduled shutdown for Unit 2 is August 30, 1984; thus, this extension of this portion of the power source modification past the Unit 1 restart should be roughly one month. All other listed modifications for Unit 1 will be completed prior to restart.

### Changes from the July 3, 1984 meeting:

- a. Additional smoke detectors. Although additional smoke detectors were identified at the July 3, 1984 meeting and are being installed during the outages, installation of some detectors outside containment has been deferred to concentrate on in-containment work. Therefore, the additional smoke detector installation will now be completed by January 31, 1985 and is shown on Attachment II.
- b. Replacement of Fire Dampers in the Emergency Switchgear Rooms and Enlargement of Fire Damper Access Panels. These modifications were originally scheduled to be completed by January 31, 1985. The schedule for installation has been accelerated. These modifications will now be completed prior to startup from each unit's 1984 refueling outage.
- c. RHR Pump Separation - Unit 2 only. If necessary, this is scheduled for completion during Unit 2's 1984 refueling outage. An exemption request pertaining to the configuration was submitted to the NRC on May 1, 1984. This modification would only be implemented if the exemption was denied.

ATTACHMENT I

APPENDIX "R" MODIFICATIONS TO BE COMPLETED

DURING NORTH ANNA 1984 REFUELING OUTAGES

Unit 1

1. Installation of Cable Tray Covers and Fire Stops  
(Inside Containment)
- \*2. Appendix "R" Flux Monitor System
- \*3. Appendix "R" I&C Modifications
- \*4. Appendix "R" Diesel Generator Control Isolation
5. Appendix "R" Power Source
- \*6. Appendix "R" E.S.R. Halon System
- \*7. Appendix "R" Pressurizer Level Indication
- \*8. Appendix "R" R.H.R. Pump Separation
- \*9. Appendix "R" Hot Leg Temperature Indication
10. Replace Load Center Fuses
11. Replace Fire Dampers in the Emergency Switchgear Rooms
12. Enlarge Fire Damper Access

UNIT 2

- \*1. Appendix "R" I&C Modifications
- \*2. Appendix "R" Flux Monitor System
- \*3. Appendix "R" Diesel Generator Control Isolation
- \*4. Appendix "R" E.S.R. Halon System
- \*5. Appendix "R" Pressurizer Level Indication
- \*6. Appendix "R" Hot Leg Temperature Indication
- \*7. Appendix "R" RCS Pressure Separation
8. Replace Load Center Fuses
9. Enlarge Fire Damper Access
10. Installation of Cable Tray Covers and Fire  
Stops (Inside Comtainment)

\* These modifications have been formally reported to the NRC either as modifications requiring NRC approval or as modifications previously reported to the NRC which were subsequently revised. Not all modifications listed require NRC approval.



## ATTACHMENT II

Attachment II lists all modifications applicable to both units to be completed by January 31, 1985. Most of the modifications were identified in the latter phase of the reanalysis.

Compensatory measures are identified for each modification which will remain in effect until each modification is completed. The fire watches identified as a compensatory measure consist of continuous, roving 24-hour manning in designated fire areas by trained individuals whose only responsibility is to watch for fires.

### Changes from the July 3, 1984 meeting:

- a. Seal Pipe Tunnel between the Auxiliary Building and Turbine Building. This modification was originally identified on July 3, 1984 as scheduled for completion by January 31, 1985. Further analyses has demonstrated that the existing level of fire protection in this area is equivalent to that required by Appendix R. An exemption request will be submitted by October 15, 1984.
- b. Ventilation Modifications. These modifications were not specifically identified at the July 3, 1984 meeting and have been recently added to the list. Descriptions of these modifications will be submitted by October 15, 1984.
- c. Additional Smoke Detectors. - See Attachment I changes.
- d. Fire Notification System (Gai-Tronics Tone Alert). This modification was not specifically identified at the July 3, 1984 meeting and has recently been added to the list. Description of this modification will be submitted by October 15, 1984.

ATTACHMENT II

APPENDIX "R" MODIFICATIONS SCHEDULED TO BE COMPLETED  
BY JANUARY 31, 1985  
APPLICABLE TO BOTH UNITS

<u>DESCRIPTION</u>	<u>COMPENSATORY MEASURES</u>
1. Emergency Lighting Upgrade*	1. Portable lanterns are located in the Control Room. Lanterns have batteries with greater than 8 hour capacity.
2. Voice Communications Upgrade*	2. Automatic Detection and CO <sub>2</sub> Fire Suppression System installed in the Cable Spreading Room; fire watch in Emergency Switchgear Room**; temporary antenna installed in separate fire area.
3. Auxiliary Building Sprinkler System*	3. Fire watch in place in the Auxiliary Building.
4. Seal Charging Pump Cubicle Penetrations	4. Fire watch in place in the Auxiliary Building.
5. Ventilation Modifications	5. Fire watch in place in the Auxiliary Building and Emergency Switchgear Room** until sufficient number of portable fans*** are available. A portable fan will also be available for emergency use in the Fuel building.
6. Additional Smoke Detectors	6. Fire watch in place in the Auxiliary Building and the Emergency Switchgear Room**.
7. Fire Notification System (Gai-Tronics Tone Alert)	7. Fire watch in place in Emergency Switchgear Room**.

\* These modifications have been formally reported to the NRC either as modifications requiring NRC approval or as modifications previously reported to the NRC which were subsequently revised. Not all modifications listed above require NRC approval.

\*\* Vepco is considering making the manual Halon fire suppression system in the Emergency Switchgear Room an automatic system as an interim, compensatory measure. In that event, the fire watch will be discontinued and the fire detection and Halon fire suppression system will serve as the compensatory measure.

\*\*\* Vepco is evaluating the adequacy of this compensatory measure as a final modification.

### ATTACHMENT III

Attachment III lists those modifications identified by the reanalysis necessary to protect the identified components against spurious operations resulting from a postulated fire. These areas of concern were recently identified by the reanalysis. The permanent modifications consist of rerouting cable in conduit to achieve separation and protection against "hot shorts"; and/or installation of manual isolation switches; or installation of additional solenoid-operated valves. Due to their location and the complexity of the long-term modifications, the modifications will not be completed until the next refueling outage for each unit (i.e., the refueling outage after the 1984 refueling outages). Where possible, outside containment work associated with these modifications will continue during power operations.

Compensatory measures for each modification are also specified and will remain in effect until the permanent modifications are completed.

#### Changes from the July 3, 1984 meeting:

CVCS Excess Letdown. Excess letdown was originally identified at the July 3, 1984 meeting as a high-low pressure interface requiring modification to protect from spurious operation. Subsequent analysis has determined that no modification is required because no spurious operation would occur.

Main Steam Isolation Valves. This modification was not identified at the July 3, 1984 meeting and has only recently been added to the list. A description of this modification will be submitted by October 15, 1984.



ATTACHMENT III  
APPENDIX "R" MODIFICATIONS SCHEDULED TO BE COMPLETED  
BY THE NEXT REFUELING OUTAGE FOR EACH UNIT

<u>DESCRIPTION</u>	<u>COMPENSATORY MEASURE</u>
A. Protect Pressurizer PORV*	A. Temporary fire detection capability in and under affected cable trays will be provided inside containment prior to startup. An automatic detection and CO <sub>2</sub> suppression system is installed in the Cable Vault and Tunnel for each unit. A fire watch has been implemented in the Emergency Switchgear Room**. An interim procedure will be in place by startup for each unit to shut the affected PORV and block valve when fire threatens cables inside or outside containment.
B. Reactor Vessel Head Vent and Pressurizer Vent.*	B. An automatic detection and CO <sub>2</sub> suppression system is installed in the Cable Vault and Tunnel for each unit. A fire watch has been implemented in the Emergency Switchgear Room**. An interim procedure will be in place prior to startup for each unit to shut vents when fire threatens cables outside containment. For a fire inside containment, makeup capability is available.
C. CVCS Normal Letdown*	C. Temporary fire detection capability in and under affected cable trays will be provided inside containment. An automatic detection and CO <sub>2</sub> suppression system is installed in the Cable Vault and Tunnel for each unit. A fire watch has been implemented in the Emergency Switchgear Room**. An interim procedure will be in place by startup for each unit to shut the letdown valves when fire threatens cables inside or outside containment.
D. Main Steam Isolation Valves*	D. Fire watch located in the Emergency Switchgear Room** until an automatic detection and CO <sub>2</sub> fire suppression system is installed in the Cable Vault and Tunnel. An interim procedure will be in place prior to startup for each unit to shut the MSIVs when fire threatens cables in the Emergency Switchgear Room, Cable Vault and Tunnel, or Control Room.

\* Descriptions of the final modifications and any associated exemption requests will be submitted to the NRC by October 15, 1984.

\*\* Vepco is considering making the manual Halon fire suppression system in the Emergency Switchgear Room an automatic system as an interim compensatory measure. In that event, the fire watch will be discontinued and the fire detection and Halon fire suppression system will serve as the compensatory measure.