

May 13, 1987

Docket Nos. 50-338  
and 50-339

Mr. W. L. Stewart  
Vice President - Nuclear Operations  
Virginia Electric and Power Company  
Post Office Box 26666  
Richmond, Virginia 23261

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Dear Mr. Stewart:

The Commission has issued the enclosed Amendment Nos. 95 and 80 to Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). The amendments revise the Technical Specifications (TS) in response to your letter dated April 10, 1986. The amendments are effective within 14 days from the date of issuance.

The amendments differentiate the requirements of Technical Specification (TS) 3/4.3.3.7 (fire detection instrumentation) for inside and outside of containment, and modify the functional testing interval for fire detection instrumentation inside containment to be consistent with NUREG-0452, Revision 4.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

/s/

Leon B. Engle, Project Manager  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Enclosure:

- 1. Amendment No. 95 to NPF-4
- 2. Amendment No. 80 to NPF-7
- 3. Safety Evaluation

cc w/enclosures:

See next page

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MYoung  
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Mr. W. L. Stewart  
Virginia Electric & Power Company

North Anna Power Station  
Units 1 and 2

cc:

Richard M. Foster, Esq.  
Cockrell, Quinn & Creighton  
516 Cherry Tower  
920 South Cherry Street  
Denver, Colorado 80222

Michael W. Maupin, Esq.  
Hunton, Williams, Gay and Gibson  
P. O. Box 1535  
Richmond, Virginia 23212

Mr. W. T. Lough  
Virginia Corporation Commission  
Division of Energy Regulation  
P. O. Box 1197  
Richmond, Virginia 23209

Ellyn R. Weiss, Esq.  
Harmon, Weiss and Jordan  
2001 S Street NW  
Washington, DC 20009

Mr. J. T. Rhodes  
Senior Vice President - Power Ops.  
Virginia Electric and Power Co.  
Post Office Box 26666  
Richmond, Virginia 23261

Mr. Patrick A. O'Hare  
Office of the Attorney General  
Supreme Court Building  
101 North 8th Street  
Richmond, Virginia 23219

Resident Inspector/North Anna  
c/o U.S. NRC  
Senior Resident Inspector  
Route 2, Box 78  
Mineral, Virginia 23117

Atomic Safety and Licensing Appeal  
Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Regional Administrator, Region II  
U.S. Nuclear Regulatory Commission  
Office of Executive Director  
for Operations  
101 Marietta Street N.W., Suite 3100  
Atlanta, Georgia 30323

Mr. E. W. Harrell  
P. O. Box 402  
Mineral, Virginia 23117

Old Dominion Electric Cooperative  
c/o Executive Vice President  
Innsbrook Corporate Center  
4222 Cox Road, Suite 102  
Glen Allen, Virginia 23060

Mr. William C. Porter, Jr.  
County Administrator  
Louisa County  
P. O. Box 160  
Louisa, Virginia 23093



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 95  
License No. NPF-4

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Virginia Electric and Power Company, et al., (the licensee) dated April 10, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;  
and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

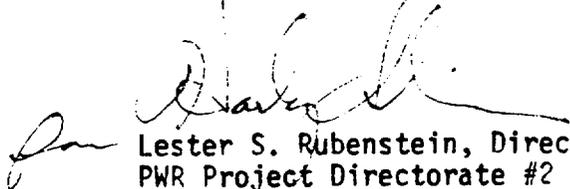
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.D.(2) of Facility Operating License No. NPF-4 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 95, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 14 days of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 13, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 95

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page as indicated. The revised page is identified by amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

Page

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TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R
2. Reactor Coolant Inlet Temperature-T <sub>hot</sub> (wide range)	M	R
3. Reactor Coolant Inlet Temperature-T <sub>cold</sub> (wide range)	M	R
4. Reactor Coolant Pressure-Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level-Narrow Range	M	R
8. Refueling Water Storage Tank Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator	M	R
13. PORV Block Valve Position Indicator	M	R
14. Safety Valve Position Indicator	M	R
15. Reactor Vessel Coolant Level Monitor	M	R
16. Containment Water Level (narrow range)	M	R
17. Containment Water Level (wise range)	M	R

## INSTRUMENTATION

### FIRE DETECTION INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection instrument is required to be OPERABLE.

#### ACTION:

With the number of OPERABLE fire detection instrument(s) less than the minimum number OPERABLE requirement of Table 3.3-11:

- a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is (are) located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5.1.
- b. Restore the inoperable instrument(s) to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.
- c. The provisions for Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments which are outside containment shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST. Fire detection instruments which are inside containment shall be demonstrated OPERABLE by the performance of a CHANNEL FUNCTIONAL TEST during each COLD SHUTDOWN exceeding 24 hours unless performed in the previous 6 months.

4.3.3.7.2 The NFPA Code 72D supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits between the local panels in Specification 4.3.3.7.2 and the control room shall be demonstrated OPERABLE at least once per 31 days.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 80  
License No. NPF-7

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Virginia Electric and Power Company, et al., (the licensee) dated April 10, 1986 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

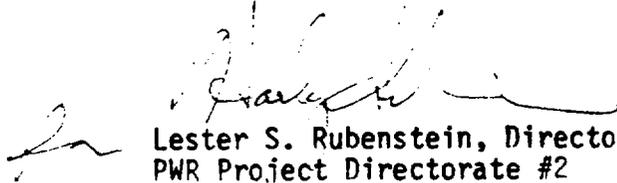
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-7 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 80, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective within 14 days of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 13, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 80

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page as indicated. The revised page is identified by amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

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## INSTRUMENTATION

### FIRE DETECTION INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.3.3.7 As a minimum, the fire detection instrumentation for each fire detection zone shown in Table 3.3-11 shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection instrument is required to be OPERABLE.

#### ACTION:

With the number of OPERABLE fire detection instrument(s) less than the minimum number OPERABLE requirement of Table 3.3-11:

- a. Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is (are) located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperature at least once per hour at the locations listed in Specification 4.6.1.5.1.
- b. Restore the inoperable instrument(s) to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.
- c. The provisions for Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.7.1 Each of the above required fire detection instruments which are outside containment shall be demonstrated OPERABLE at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST. Fire detection instruments which are inside containment shall be demonstrated OPERABLE by the performance of a CHANNEL FUNCTIONAL TEST during each COLD SHUTDOWN exceeding 24 hours unless performed in the previous 6 months. . .

4.3.3.7.2 The NFPA Code 72D supervised circuits supervision associated with the detector alarms of each of the above required fire detection instruments shall be demonstrated OPERABLE at least once per 6 months.

4.3.3.7.3 The non-supervised circuits between the local panels in Specification 4.3.3.7.2 and the control room shall be demonstrated OPERABLE at least once per 31 days.

TABLE 3.3-11

FIRE DETECTION INSTRUMENTATION

<u>INSTRUMENT LOCATION</u>	<u>MINIMUM DETECTORS REQUIRED</u>	
	<u>HEAT</u>	<u>SMOKE</u>
1. Reactor Containment		
a. Reactor Coolant Pumps	1/pump*	
b. Residual Heat Removal Pump Area	3	
c. Cable Penetration Area	7	8
d. Recirculation Air System		2
2. Control Room		
a. Under Floor - Loop 1	2	2
b. Under Floor - Loop 2	2	
c. Normal Air Supply#		1
d. Emergency Air Supply		1
e. Ceiling Area		10
f. Return Air Duct		1
3. Cable Spreading Room	3	4
4. Primary Cable Vault and Tunnel	2	3
5. Service Building Cable Vault and Tunnel	5	4
6. Emergency Switchgear Rooms		
a. Emergency Air Supply		1
b. Emergency Switchgear and Air Conditioning Rooms		7
7. Station Battery Room		1/room
8. Diesel Generators	2/room	
9. Fuel Oil Pump House#		
a. Room 1	1	1
b. Room 2	1	1
c. Motor Control Center Room		1
10. Rod Control Equipment and Motor Control Center Room (Elevation 280.0)		2
11. Auxiliary Building		
a. Charging Pump Cubicles		1/cubicle
b. Exhaust Duct (Northeast-Cubicles)#		1
c. Exhaust Duct (South Central-Cubicles)#		1
d. Exhaust Duct (Northwest-Cubicles)#		1



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 95 AND 80 TO

FACILITY OPERATING LICENSE NOS. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

INTRODUCTION

By letter dated April 10, 1986, the Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2). Specifically, the proposed changes would differentiate the requirements of the NA-1&2 Technical Specification (TS) 3/4.3.3.3.7 (fire detection instrumentation) for inside and outside of containment. Also, the changes would modify the surveillance interval for fire detection instruments in containment to every cold shutdown exceeding 24 hours unless performed within the previous six months. In addition, the proposed changes would replace the one hour fire watch requirements for containment fire zones which have inoperable fire detection instrumentation with an inspection once every eight hours or hourly monitoring of containment air temperature. These changes, as noted above, are consistent with the requirements for fire detection instrumentation specified in the Westinghouse Standard Technical Specifications for Pressurized Water Reactors, NUREG-0452, Revision 4, TS 3/4.3.3.3.8 and which appropriately applies to NA-1&2 TS 3/4.3.3.3.7. Technical Specification 3/4.3.3.3.8, NUREG-0452, Revision 4 states in part: "With the number of OPERABLE fire detection instrument(s) less than the minimum number Operable requirement . . . Within 1 hour establish a fire watch patrol to inspect the zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, then inspect the containment at least once per 8 hours or (monitor the containment air temperature at least once per hour . . .)." The appropriate surveillance requirement to TS 3/4.3.3.3.8 states in part: ". . . Fire detectors which are not accessible during plant operation shall be demonstrated Operable . . . during each COLD SHUTDOWN exceeding 24 hours unless performed in the previous 6 months."

DISCUSSION

NA-1&2 are designed with subatmospheric containments. The corresponding NA-1&2 TS requires that the containments be maintained subatmospheric during operations in Modes 1 through 4. Under these specified subatmospheric conditions, the containment environment is oxygen-deficient, thereby requiring respiratory protection. As a consequence, it is prudent to limit personnel entry into containment during subatmospheric modes of operation.

The present NA-1&2 surveillance requirement specifies a functional test of fire detection instrumentation every six months. This requires a containment entry every six months to perform the test. Testing of fire detection instrumentation inside containment has resulted in extended stay times, subjecting personnel to radiation exposure as well as the oxygen-deficient environment of the subatmospheric containment. Consistent with Standard Technical Specification 3/4.3.3.3.8 on fire detection instrumentation, the licensee has identified "not accessible during plant operation" as referring to "inside containment" and would modify the surveillance interval for fire detection instruments inside containment to every cold shutdown exceeding 24 hours unless performed within the previous six months. Independent of personnel safety concerns, there are a sufficient number of redundant or diverse fire detectors in the containment fire zones to justify the proposed change in surveillance interval.

Likewise, the present NA-1&2 TS 3/4.3.3.3.7 action statement requires an hourly fire watch patrol in containment to inspect those containment fire zones which had inoperable fire detection instrumentation. This requirement is impractical, independent of personnel safety concerns, due to the difficulty of implementing hourly entries into containment. A containment entry/exit typically takes 10 minutes due to the time for depressurization/pressurization in the air lock. This does not consider the time to don/remove anti-contamination clothing and respirator and travel through access control areas. Furthermore, hourly inspection of containment spaces is not justified given the relative lack of consumable material compared to areas outside of containment. Monitoring containment air temperature on a hourly basis or a visual inspection of containment every eight hours is an appropriate compensatory action to take in the event of instrument inoperability until the minimum required number of fire detection devices have been restored operable and is consistent with TS 3/4.3.3.3.8 as noted above.

#### EVALUATION

The proposed changes do not increase the likelihood of an undetected fire in containment. The proposed compensatory measures of hourly temperature monitoring or visual inspection of containment every eight hours provide adequate interim fire detection capability until the minimum required number of fire detection devices have been restored operable. Likewise, the proposed change to the functional testing interval for fire detection instrumentation in containment merely modifies the test frequency during sustained power operations. As mentioned above, there are a sufficient number of redundant or diverse fire detectors in the containment fire zones to ensure detection and justify the proposed change in the surveillance interval. Finally, the proposed changes still require adequate functional testing of fire detection instrumentation and compensatory inspections or hourly temperature monitoring consistent with the Westinghouse Standard Technical Specifications for Pressurized Water Reactors, NUREG-0452, Revision 4, which appropriately apply to NA-1&2. Based on the above, we find the proposed changes to be acceptable.

#### ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The staff has determined that the

amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously published a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(c)(9). Pursuant to 10 CFR §51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: May 13, 1987

Principal Contributor:

Leon B. Engle