

June 5, 1996

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Mr. J. P. O'Hanlon  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

SUBJECT: NORTH ANNA UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: REACTOR  
COOLANT SYSTEM TOTAL FLOW RATE (TAC NOS. M94639 AND M94640)

Dear Mr. O'Hanlon:

The Commission has issued the enclosed Amendment Nos. 201 and 182 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 January 30, 1996.

The amendments modify the Technical Specifications to increase the minimum allowable reactor coolant system total flow rate from 284,000 gpm (for Unit 1) and 275,000 gpm (for Unit 2) to 295,000 gpm for both units.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

This completes our effort on this issue and we are, therefore, closing out Tac Nos. M94639 and M94640.

Sincerely,  
Original signed by:

Bart C. Buckley, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338  
and 50-339

Enclosures:

1. Amendment No. 201 to NPF-4
2. Amendment No. 182 to NPF-7
3. Safety Evaluation

cc w/enclosures:  
See next page

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See next page

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NAME	Dunnington <sup>ETD</sup>	BBuckley <sup>EB</sup>	EImbro <sup>EB</sup>	RJones	JIM/11
DATE	5/15/96	5/15/96	6/15/96	5/17/96	5/12/96
COPY	Yes/No	Yes/No	Yes/No	Yes/No	

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Mr. J. P. O'Hanlon  
Virginia Electric & Power Company

North Anna Power Station  
Units 1 and 2

cc:

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Louisa County  
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Louisa, Virginia 23093

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U.S. Nuclear Regulatory Commission  
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Senior Resident Inspector  
North Anna Power Station  
U.S. Nuclear Regulatory Commission  
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Robert B. Strobe, M.D., M.P.H.  
State Health Commissioner  
Office of the Commissioner  
Virginia Department of Health  
P.O. Box 2448  
Richmond, Virginia 23218

DATED: June 5, 1996

AMENDMENT NO. 201 TO FACILITY OPERATING LICENSE NO. NPF-4-NORTH ANNA UNIT 1  
AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. NPF-7-NORTH ANNA UNIT 2

Docket File

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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. 201  
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 January 30, 1996, 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. 201, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Eugene V. Imbro, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 5, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 201

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.

Remove Page

3/4 2-15

Insert Page

3/4 2-15

TABLE 3.2-1  
DNB PARAMETERS

<u>PARAMETER</u>	<u>3 Loops in Operation</u>	<u>LIMITS</u>	
		<u>2 Loops in Operation ** &amp; Loop Stop Valves Open</u>	<u>2 Loops in Operation ** &amp; Isolated Loop Stop Valves Closed</u>
Reactor Coolant System T <sub>avg</sub>	≤ 591°F		
Pressurizer Pressure	≥ 2205 psig *		
Reactor Coolant System Total Flow Rate	≥ 295,000 gpm		

\* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step increase in excess of 10% RATED THERMAL POWER.

\*\* Values dependent on NRC approval of ECCS evaluation for these conditions.

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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. 182  
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 January 30, 1996, 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. 182, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Eugene V. Imbro, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 5, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 182

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.

Remove Page

3/4 2-16

Insert Page

3/4 2-16

TABLE 3.2-1  
DNB PARAMETERS

<u>PARAMETER</u>	<u>3 Loops in Operation</u>	<u>LIMITS</u>	
		<u>2 Loops in Operation ** &amp; Loop Stop Valves Open</u>	<u>2 Loops in Operation ** &amp; Isolated Loop Stop Valves Closed</u>
Reactor Coolant System T <sub>avg</sub>	≤ 591°F		
Pressurizer Pressure	≥ 2205 psig *		
Reactor Coolant System Total Flow Rate	≥ 295,000 gpm		

- 
- \* Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step increase in excess of 10% RATED THERMAL POWER.
  - \*\* Values dependent on NRC approval of ECCS evaluation for these conditions.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 201 AND 182 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

1.0 INTRODUCTION

By letter dated January 30, 1996, the Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the North Anna Power Station, Units 1 and 2 (NA-1&2). The proposed amendments modify the TS to increase the minimum allowable reactor coolant system (RCS) total flow rate from 284,000 gpm (for Unit 1) and 275,000 gpm (for Unit 2) to 295,000 gpm for both units.

2.0 BACKGROUND

Through the 1980's and into the 1990's, the North Anna Unit 1 and 2 steam generators experienced increasing levels of steam generator tube plugging. There was a corresponding decrease in the reactor coolant flow rate. As a result, the Commission issued several amendments in the 1989 to 1992 time frame to reduce the minimum reactor coolant flow rate. These reductions in minimum allowable RCS total flow rate reduced the available departure from nucleate boiling ratio (DNBR) margin. Subsequently, the licensee replaced the steam generators in both units, with steam generators having an increased number of tubes compared to the replaced steam generators. With the increased number of tubes and less flow resistance, a greater reactor coolant flow rate is attainable. When the amendments were issued decreasing the minimum required reactor coolant flow rate, the transmittal letters stated the revision was temporary and would be increased when the steam generators were replaced.

3.0 CHANGES TO THE TECHNICAL SPECIFICATIONS

The following specific TS changes apply to Units 1 and 2 as noted:

Unit 1, Table 3.2-1, DNB Parameters, of TS 3.2.5

- Change the existing criterion for Reactor Coolant System Total Flow Rate from " $\geq 284,000^{***}$ " to " $\geq 295,000$ ."

- Remove the following note from the bottom of Table 3.2-1 (page 3/4 2-15):

"\*\*\* The value for the minimum allowable Reactor Coolant System Total Flow Rate is reduced to 268,500 gpm until steam generator replacement."

#### Unit 2, Table 3.2-1, DNB Parameters, of TS 3.2.5

- Change the existing criterion for Reactor Coolant System Total Flow Rate from " $\geq 275,300$ " to " $\geq 295,000$ ."

#### 4.0 EVALUATION

The RCS flow rate is an assumption in safety analyses, affecting Updated Final Safety Analysis Report Chapter 15 transient analyses, Reactor Core Safety Limits, and thermal overtemperature and overpower  $\Delta$  protection functions.

An increase in the minimum RCS flow rate limit generates a benefit for safety analyses which have a DNBR acceptance criterion. For other safety analyses which are limited by considerations such as heat sink or pressurization criteria, an increased RCS flow rate limit is either a benefit, or the event is insensitive to RCS flow rate. The existing safety analyses are analyzed for a lower RCS flow rate limit, and are bounding with respect to expected actual plant behavior and to analyses at the proposed RCS total flow rate. This change when implemented will increase the available analysis margin and make the TS for the RCS total flow rate consistent for both North Anna, Units 1 and 2.

#### 5.0 SUMMARY

Based on its review, the staff finds the proposed changes to the TS acceptable.

#### 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendment. The State official had no comment.

#### 7.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 issued a proposed finding that these amendments involve no significant hazards consideration and there has been no

public comment on such finding (61 FR 7559). 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 the amendments.

#### 8.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Bart Buckley

Date: June 5, 1996