

December 9, 1992

Docket Nos. 50-338
and 50-339

DISTRIBUTION
See attached sheet

Mr. W. L. Stewart
Senior Vice President - Nuclear
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Dear Mr. Stewart:

SUBJECT: NORTH ANNA UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: MONITORING
PROGRAM FOR SECONDARY WATER CHEMISTRY (TAC NOS. M84455 AND
M84456)

The Commission has issued the enclosed Amendment Nos. 169 and 148 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 September 4, 1992.

The amendments revise the current NA-1&2 TS pertaining to the monitoring
program for secondary water chemistry. The revised TS are consistent with the
Steam Generator Owners' Group and Electric Power Research Institute guidelines
and NUREG-0452, Revision 4, "Standard Technical Specifications for
Westinghouse Pressurized Water Reactors."

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

Sincerely,
(Original Signed By)

Leon B. Engle, Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 169 to NPF-4
2. Amendment No. 148 to NPF-7
3. Safety Evaluation

cc w/enclosures:
See next page

OFC	:LA:PDII-2	:PM:PDII-2	:EMCB	:D:PDII-2	:OGC	:
NAME	:E. Tana	:L. Engle	:JStroghider	:HBeckow	:	:
DATE	: 11/6/92	: 11/6/92	: 11/10/92	: 11/17/92	: 11/19/92	:

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Document Name: NA84455.AMD

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

North Anna Power Station
Units 1 and 2

cc:

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

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

Michael W. Maupin, Esq.
Hunton and Williams
Riverfront Plaza, East Tower
951 E. Byrd Street
Richmond, Virginia 23219

Regional Administrator, RII
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

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

Mr. G. E. Kane, Manager
North Anna Power Station
P.O. Box 402
Mineral, Virginia 23117

Old Dominion Electric Cooperative
4201 Dominion Blvd.
Glen Allen, Virginia 23060

Mr. M. L. Bowling, Manager
Nuclear Licensing & Programs
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Office of the Attorney General
Supreme Court Building
101 North 8th Street
Richmond, Virginia 23219

Senior Resident Inspector
North Anna Power Station
U.S. Nuclear Regulatory Commission
Route 2, Box 78
Mineral, Virginia 231172

DATED: December 9, 1992

AMENDMENT NO. 169 TO FACILITY OPERATING LICENSE NO. NPF-4-NORTH ANNA UNIT 1
AMENDMENT NO. 148 TO FACILITY OPERATING LICENSE NO. NPF-7-NORTH ANNA UNIT 2

Docket File
NRC & Local PDRs
PDII-2 Reading
S. Varga, 14/E/4
G. Lainas, 14/H/3
H. Berkow
E. Tana
L. Engle
OGC
D. Hagan, 3302 MNBB
G. Hill (8), P-137
Wanda Jones, MNBB-7103
C. Grimes, 11/F/23
J. Strosnider
ACRS (10)
OPA
OC/LFMB
M. Sinkule, R-II



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. 169
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 September 4, 1992, 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.

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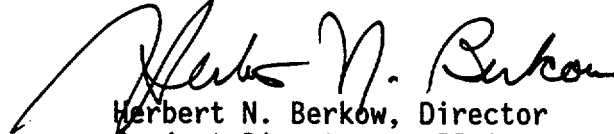
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.D.(2) of Facility Operating License No. NPF-4 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 169, 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



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 169

TO FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages 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 Pages

6-13 (no changes)
6-13a

Insert Pages

6-13 (no changes)
6-13a

ADMINISTRATIVE CONTROLS

- c. Surveillance and test activities of safety related equipment.
- d. Security Plan implementation.
- e. Emergency Plan implementation.
- f. Fire Protection Program implementation.
- g. PROCESS CONTROL PROGRAM implementation.
- h. OFFSITE DOSE CALCULATION MANUAL implementation.
- i. Quality Assurance Program for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21, Revision 1, June 1974 and Regulatory Guide 4.1, Revision 1, April 1975.

6.8.2 Each procedure of 6.8.1 above, except 6.8.1.d, 6.8.1.e, and 6.8.1.f and changes thereto, shall be reviewed and approved by the SNSOC prior to implementation and reviewed periodically as set forth in administrative procedures. Procedure of 6.8.1.d, 6.8.1.e, and 6.8.1.f shall be reviewed and approved as per 6.5.1.6.f, 6.5.1.6.j, and 6.5.1.6.m. SNSOC approval shall be certified in writing by an Assistant Station Manager.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

- a. The intent of the original procedure is not altered.
- b. The change is approved by two members of the plant supervisory staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.
- c. The change is documented, reviewed, and approved by the SNSOC within 14 days of implementation. SNSOC approval shall be certified in writing by an Assistant Station Manager.

6.8.4 The following programs shall be established, implemented, and maintained:

a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the recirculation spray, safety injection, chemical and volume control, gas stripper, and hydrogen recombiners. The program shall include the following:

- (i) Preventive maintenance and periodic visual inspection requirements, and
- (ii) Integrated leak test requirements for each system at refueling cycle intervals or less.

ADMINISTRATIVE CONTROLS

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for monitoring, and
- (iii) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

- (i) Identification of a sampling schedule for the critical variables and control points for these variables,
- (ii) Identification of the procedures used to measure the values of the critical variables,
- (iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser inleakage,
- (iv) Procedures for the recording and management of data,
- (v) Procedures defining corrective actions for all control point chemistry conditions, and
- (vi) A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-Accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for sampling and analysis,
- (iii) Provisions for maintenance of sampling and analysis equipment.



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. 148
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 September 4, 1992, 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.

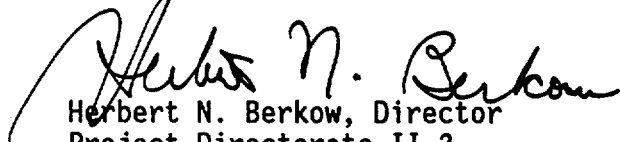
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-7 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 148 , 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



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 148

TO FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages 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 Pages

6-14a

6-14b (no changes)

Insert Pages

6-14a

6-14b (no changes)

ADMINISTRATIVE CONTROLS

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for monitoring, and
- (iii) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

- (i) Identification of a sampling schedule for the critical variables and control points for these variables,
- (ii) Identification of the procedures used to measure the values of the critical variables,
- (iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser inleakage,
- (iv) Procedures for the recording and management of data,
- (v) Procedures defining corrective actions for all control point chemistry conditions, and
- (vi) A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-Accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for sampling and analysis,
- (iii) Provisions for maintenance of sampling and analysis equipment.

ADMINISTRATIVE CONTROLS

e. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1,



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 169 AND 148 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 September 4, 1992, 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). The proposed changes would revise the current TS pertaining to the monitoring program for secondary water chemistry. The proposed changes would delete TS 6.8.4.c(vii). Also, TS 6.8.4.c(iii) would be modified to reflect the deletion of TS 6.8.4.c(vii). Finally, editorial changes would be made to TSs 6.8.4.c(v) and 6.8.4.c(vi).

2.0 DISCUSSION

TS 6.8.4.c(vii) was a condition established for obtaining the full power license for NA-2. TS 6.8.4.c(vii) was implemented in licensee amendment No. 32 for NA-1. The NRC decision to require the licensee to establish monitoring and repair of condenser inleakage is discussed in NUREG-0053, Supplement 10, Safety Evaluation Report for the North Anna Power Station. NUREG-0053 states:

"... we require monitoring of the steam condensate at the effluent of the condensate pump. When condenser leakage is confirmed the applicant will be required to repair or plug the leak in accordance with MTEB Branch Technical Position MTEB 5-3 attached to Standard Review Plan 5.4.2.1."

MTEB 5-3 describes the suggested secondary water chemistry program in order to maintain steam generator integrity. MTEB 5-3, dated July 1981, states the following:

"11.3.f.(1)(f) When a condenser leak is confirmed, the leak should be repaired or plugged within 96 hours, or before the total integrated conductivity increase reaches 20 μ mho/cm hrs. The staff will consider

other impurity-time limit proposals for limiting the quantity of impurities entering the steam generator."

Steam Generator Owners Group (SGOG) and Electric Power Research Institute (EPRI) guidelines were established in February 1985 and December 1988, respectively. These guidelines have been established as industry accepted standards and are more stringent than the MTEB 5-3 position with regard to establishing actions for confirmation and repair of condenser inleakage. MTEB 5-3 places primary emphasis on condenser inleakage. The SGOG and EPRI guidelines place primary emphasis on steam generator chemistry specifications to ensure secondary water chemistry is maintained at conditions to prevent steam generator corrosion.

3.0 Technical Specification Changes

The proposed changes would modify TS 6.8.4.c.(iii) and delete TS 6.8.4.c.(vii). TS 6.8.4.c(iii) and (vii) presently state the following:

"C. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

(iii) Identification of process sampling points,

...

(vii) Monitoring of the condensate at the discharge of the condensate pumps for evidence of condenser inleakage. When condenser inleakage is confirmed, the leak shall be repaired, plugged, or isolated within 96 hours."

The revised Technical Specification 6.8.4.c(iii) will read as follows:

(iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser inleakage,"

The purpose of the revised TS 6.8.4.c(iii) would be to incorporate the requirements that were in TS 6.8.4.c(vii) for monitoring of condenser inleakage. These changes [deletion of TS 6.8.4.c(vii), and modification of TS 6.8.4.c(iii)] are consistent with the SGOG and EPRI guidelines and will continue to ensure that the condensate at the discharge of the condensate pumps will be monitored in order to detect condenser inleakage.

The SGOG and EPRI guidelines have established appropriate action levels to be entered when a chemistry parameter is not maintained. For example, the normal

value for condenser inleakage is less than four cubic feet per minute (cfm) inleakage. If condenser inleakage exceeds four cfm, action level one is entered into to promptly identify and correct the cause of the out of normal value without power reduction. The specific action required is to return condenser inleakage to within the normal value within one week. However, condenser inleakage outside normal values will cause other secondary water chemistry parameters to be outside their specified limits. Appropriate actions to maintain other secondary water chemistry parameters within specified limits may include such actions as reducing power or a plant shutdown. NA-1&2 have incorporated chemistry parameter action levels into station administrative procedures. These action levels ensure a more conservative approach than MTEB 5-3 for condenser inleakage. This will replace, in part, TS 6.8.4.c(vii), that discussed the action time associated with confirmation of condenser inleakage. In addition, minor editorial changes are proposed to TS 6.8.4.c(v) and 6.8.4.c(vi).

Finally, the proposed changes are consistent with the SGOG guidelines, EPRI guidelines, and NUREG-0452, Revision 4, Standard Technical Specifications for Westinghouse Pressurized Water Reactors.

4.0 EVALUATION

The proposed changes are consistent with the SGOG and EPRI guidelines and applicable sections of NUREG-0452. These changes would ensure that the condensate at the discharge of the condensate pumps will be monitored in order to detect condenser inleakage. Also, station administrative procedures will ensure appropriate actions are taken in the event of condenser leakage. These station procedures ensure an aggressive approach for condenser inleakage by evaluating all chemistry parameters that may be affected and the entering of any applicable action level for any chemistry parameter that may be associated with an increased condenser inleakage. Finally, the proposed changes are more conservative than the current NA-1&2 TS. Based on all of the above, the staff finds the proposed changes to be acceptable.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

These amendments relate to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). 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.

7.0 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: Leon B. Engle

Date: December 9, 1992