

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

March 25, 2009

Mr. David A. Christian President and Chief Nuclear Officer Virginia Electric and Power Company Innsbrook Technical Center 5000 Dominion Boulevard Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING DELETION OF TECHNICAL SPECIFICATION 3.7.13 – MAIN CONTROL ROOM/EMERGENCY SWITCHGEAR ROOM BOTTLED AIR SYSTEM (TAC NOS. MD8354 AND MD8355)

Dear Mr. Christian:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 255 and 236 to Renewed Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2. The amendments change the Technical Specifications (TSs) in response to your application dated March 19, 2008, as supplemented October 7, 2008, November 17, 2008, and December 10, 2008.

These amendments revise the TSs to 1) delete TS 3.7.13, "MCR/ESGR Bottled Air System," 2) create TS 3.3.6, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation," to establish the operability requirements for the MCR/ESGR envelope isolation function, and 3) incorporate TS 3.7.14, "MCR/ESGR Emergency Ventilation During Movement of Recently Irradiated Fuel Assemblies," into TS 3.7.10, "MCR/ESGR Emergency Ventilation System." The changes revise the TSs to be consistent with the assumptions of the current dose analysis of record, performed in accordance with Title 10 of the *Code of Federal Regulations,* Section 50.67, "Accident Source Term," and the results of the nonpressurized MCR/ESGR envelope tracer gas testing.

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

incerely.

John Stang, Senior Project Manager Plant Licensing Branch II-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosures:

- 1. Amendment No. 255 to NPF-4
- 2. Amendment No. 236 to NPF-7
- 3. Safety Evaluation

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 255 Renewed 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 March 19, 2008, as supplemented October 7, 2008, November 17, 2008, and December 10, 2008, 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.C.(2) of Renewed Facility Operating License No. NPF-4 is hereby amended to read as follows:
 - (2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 255, are hereby incorporated in the renewed 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Melanie C. Wong, Chief Plant Licensing Branch II-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Attachment: Changes to License No. NPF-4 and the Technical Specifications

Date of Issuance: March 25, 2009



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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 236 Renewed 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 March 19, 2008, as supplemented October 7, 2008, November 17, 2008, and December 10, 2008, 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 Renewed Facility Operating License No. NPF-7 is hereby amended to read as follows:
 - (2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 236, are hereby incorporated in the renewed 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 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Melanie C. Wong, Chief Plant Licensing Branch II-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Attachment: Changes to License No. NPF-7 and the Technical Specifications

Date of Issuance: March 25, 2009

ATTACHMENT

TO LICENSE AMENDMENT NO. 255

RENEWED FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

<u>AND</u>

TO LICENSE AMENDMENT NO. 236

RENEWED FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Licenses and the Appendix "A" Technical Specifications (TSs) with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

| Remove Pages | Insert Pages |
|---|---|
| <u>Licenses</u> License No. NPF-4, page 3 License No. NPF-7, page 3 | <u>Licenses</u> License No. NPF-4, page 3 License No. NPF-7, page 3 |
| TSs | <u>TSs</u> |
| i | i |
| ii | ii |
| iii | iii |
| iv | iv |
| | 3.3.6-1 |
| | 3.3.6-2 |
| | 3.3.6-3 |
| 3.7.10-1 | 3.7.10-1 |
| 3.7.10-2 | 3.7.10-2 |
| 3.7.10-3 | 3.7.10-3 |
| 3.7.10-4 | 3.7.10-4 |
| 3.7.13-1 | 3.7.13-1 |
| 3.7.13-2 | |
| 3.7.13-3 | |
| 3.7.13-4 | |
| 3.7.14-1 | 3.7.14-1 |
| 3.7.14-2 | |
| 5.5-15 | 5.5-15 |
| 5.5-16 | 5.5-16 |

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- (2) Pursuant to the Act and 10 CFR Part 70, VEPCO to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Updated Final Safety Analysis Report;
- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material, without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or component; and
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, VEPCO to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
 - (1) Maximum Power Level

VEPCO is authorized to operate the North Anna Power Station, Unit No. 1, at reactor core power levels not in excess of 2893 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 255 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

NORTH ANNA - UNIT 1

Renewed License No. NPF-4

- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material, without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations as set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
 - (1) Maximum Power Level

VEPCO is authorized to operate the facility at steady state reactor core power levels not in excess of 2893 megawatts (thermal).

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No.236 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the Issuance of the condition or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission:

a. If VEPCO plans to remove or to make significant changes in the normal operation of equipment that controls the amount of radioactivity in effluents from the North Anna Power Station, the

NORTH ANNA - UNIT 2

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| 1.0 1.1 1.2 1.3 1.4 | USE AND APPLICATION |
|--|--|
| 2.0 2.1 2.2 | SAFETY LIMITS (SLs) |
| 3.0 3.0 | LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY 3.0-1 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY |
| 3.1 3.1.1 3.1.2 3.1.3 3.1.4 3.1.5 3.1.6 3.1.7 3.1.8 3.1.9 | REACTIVITY CONTROL SYSTEMS3.1.1-1SHUTDOWN MARGIN (SDM)3.1.1-1Core Reactivity3.1.2-1Moderator Temperature Coefficient (MTC)3.1.3-1Rod Group Alignment Limits3.1.4-1Shutdown Bank Insertion Limits3.1.5-1Control Bank Insertion Limits3.1.6-1Rod Position Indication3.1.7-1Primary Grade Water Flow Path Isolation Valves3.1.8-1PHYSICS TESTS Exceptions-MODE 23.1.9-1 |
| 3.2 3.2.1 3.2.2 3.2.3 3.2.4 | POWER DISTRIBUTION LIMITS |
| 3.3 3.3.1 3.3.2 | INSTRUMENTATION |
| 3.3.3 3.3.4 3.3.5 | Post Accident Monitoring (PAM) Instrumentation |
| 3.3.6 | (EDG) Start Instrumentation |
| 3.4 3.4.1 3.4.2 3.4.3 3.4.4 3.4.5 3.4.6 | REACTOR COOLANT SYSTEM (RCS) |

| 3.4 3.4.7 3.4.8 3.4.9 3.4.10 3.4.11 3.4.12 | REACTOR COOLANT SYSTEM (RCS) (continued) RCS Loops-MODE 5, Loops Filled |
|--|--|
| 3.4.13 3.4.14 3.4.15 3.4.16 3.4.17 3.4.18 3.4.19 3.4.20 | RCS Operational LEARAGE |
| 3.5 3.5.1 3.5.2 3.5.3 3.5.4 3.5.5 3.5.6 | EMERGENCY CORE COOLING SYSTEMS (ECCS)3.5.1-1Accumulators3.5.1-1ECCS-Operating3.5.2-1ECCS-Shutdown3.5.3-1Refueling Water Storage Tank (RWST)3.5.4-1Seal Injection Flow3.5.5-1Boron Injection Tank (BIT)3.5.6-1 |
| 3.6 3.6.1 3.6.2 3.6.3 3.6.4 3.6.5 3.6.6 3.6.7 3.6.8 | CONTAINMENT SYSTEMS3.6.1-1Containment3.6.1-1Containment Air Locks3.6.2-1Containment Isolation Valves3.6.3-1Containment Pressure3.6.4-1Containment Air Temperature3.6.5-1Quench Spray (QS) System3.6.6-1Recirculation Spray (RS) System3.6.7-1Chemical Addition System3.6.8-1 |
| 3.7 3.7.1 3.7.2 3.7.3 | PLANT SYSTEMS |
| 3.7.4 | (MFRBVs) |
| 3.7.5 3.7.6 3.7.7 3.7.8 | Auxiliary Feedwater (AFW) System |

| 3.7 3.7.9 3.7.10 | PLANT SYSTEMS (continued) Ultimate Heat Sink (UHS) |
|--|---|
| 3.7.11 3.7.12 | <pre>(EVS)</pre> |
| 3.7.13 3.7.14 3.7.15 3.7.16 3.7.17 3.7.18 3.7.19 | Not Used Not Used Fuel Building Ventilation System (FBVS) |
| 3.8 3.8.1 3.8.2 3.8.3 3.8.4 3.8.5 3.8.6 3.8.7 3.8.8 3.8.9 3.8.10 | ELECTRICAL POWER SYSTEMS3.8.1-1AC Sources-Operating3.8.1-1AC Sources-Shutdown3.8.2-1Diesel Fuel Oil and Starting Air3.8.3-1DC Sources-Operating3.8.4-1DC Sources-Shutdown3.8.5-1Battery Cell Parameters3.8.6-1Inverters-Operating3.8.7-1Inverters-Shutdown3.8.8-1Distribution Systems-Operating3.8.9-1Distribution Systems-Shutdown3.8.10-1 |
| 3.9 3.9.1 3.9.2 | REFUELING OPERATIONS |
| 3.9.3 3.9.4 3.9.5 | Valves-MODE 6 |
| 3.9.6 | Residual Heat Removal (RHR) and Coolant Circulation-Low Water Level |
| 3.9.7 | Refueling Cavity Water Level |
| 4.0 4.1 4.2 . 4.3 | DESIGN FEATURES 4.0-1 Site Location 4.0-1 Reactor Core 4.0-1 Fuel Storage 4.0-1 |
| 5.0 5.1 5.2 5.3 | ADMINISTRATIVE CONTROLS Responsibility |

| 5.4 | Procedures | -1 |
|-----|------------------------|-----|
| 5.5 | Programs and Manuals | i-1 |
| 5.6 | Reporting Requirements | -1 |
| 5.7 | High Radiation Area | -1 |

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MCR/ESGR Envelope Isolation Actuation Instrumentation 3.3.6

3.3 INSTRUMENTATION

- 3.3.6 Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation
- LCO 3.3.6 The MCR/ESGR Envelope Isolation Actuation Instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

Separate Condition entry is allowed for each Function.

| | CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|----|--|--------------------------|--|---------------------|
| Α. | One or more Functions with one train inoperable. | A.1 | Isolate the MCR/ESGR envelope normal ventilation. | 7 days |
| Β. | One or more Functions with two trains inoperable. | B.1 | Isolate the MCR/ESGR envelope normal ventilation. | Immediately |
| с. | Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4. | C.1 <u>AND</u> C.2 | Be in MODE 3. Be in MODE 5. | 6 hours 36 hours |
| D. | Required Action and associated Completion Time for Condition A or B not met during movement of recently irradiated fuel | D.1 <u>OR</u> | Isolate the MCR/ESGR envelope normal ventilation. | Immediately |
| | assemblies. | D.2 | Suspend movement of recently irradiated fuel assemblies. | Immediately |

North Anna Units 1 and 2

Amendments 255/236

MCR/ESGR Envelope Isolation Actuation Instrumentation 3.3.6

| SURVEILLANCE RE | OUIREMENTS |
|-----------------|------------|
|-----------------|------------|

| | | FREQUENCY | |
|------------|--|---|-----------|
| SR 3.3.6.1 | | Verification of setpoint is not required. | |
| | | Perform TADOT. | 18 months |

MCR/ESGR Envelope Isolation Actuation Instrumentation 3.3.6

| FUNCTION | APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS | REQUIRED CHANNELS | SURVEILLANCE REQUIREMENTS | TRIP SETPOINT |
|----------------------|---|----------------------------|------------------------------------|------------------|
| 1. Manual Initiation | 1, 2, 3, 4, (a) | 2 trains | SR 3.3.6.1 | N/A |
| 2. Safety Injection | Refer to LCO 3.3. Function 1, for a requirements. | 2, "ESFAS I 11 initiati | nstrumentation, on functions an | " d |

Table 3.3.6-1 (page 1 of 1) MCR/ESGR Envelope Isolation Actuation Instrumentation

(a) During movement of recently irradiated fuel assemblies.

- 3.7 PLANT SYSTEMS
- 3.7.10 Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS)
- LCO 3.7.10 Two MCR/ESGR EVS trains shall be OPERABLE.

The MCR/ESGR envelope boundary may be opened intermittently under administrative control. _____ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

| APPLICABILITY: | MODES | 1, | 2, | 3, | and | 4, | | | |
|----------------|--------|----|------|------|------|----------|------------|------|-------------|
| | During | mc | oven | ient | : of | recently | irradiated | fuel | assemblies. |

ACTIONS

| | CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|----|---|-------------------|---|-----------------|
| Α. | One required MCR/ESGR EVS train inoperable for reasons other than Condition B. | A.1 | Restore MCR/ESGR EVS train to OPERABLE status. | 7 days |
| Β. | One or more required MCR/ESGR EVS trains inoperable due to inoperable MCR/ESGR envelope boundary in MODES 1 2 3 or 4 | B.1 <u>AND</u> | Initiate action to implement mitigating actions. | Immediately |
| | | B.2 | Verify mitigating actions ensure MCR/ESGR envelope occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. | 24 hours |
| | | AND | | |
| | | B.3 | Restore MCR/ESGR envelope boundary to OPERABLE status. | 90 days |

North Anna Units 1 and 2 3.7.10-1

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ACTIONS

| CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|--|---------------------|--|-----------------|
| C. Required Action and associated Completion Time of Condition A or B not met in | C.1 <u>AND</u> | Be in MODE 3. | 6 hours |
| MODES 1, 2, 3, or 4. | C.2 | Be in MODE 5. | 36 hours |
| D. Required Action and associated Completion Time for Condition A not met during movement of recently | D.1.1 <u>AND</u> | Isolate the MCR/ESGR envelope normal ventilation. | Immediately |
| assemblies. | D.1.2 | Place OPERABLE EVS train in emergency (outside filtered air supply) mode. | 1 hour |
| | <u>0R</u> | | |
| | D.2 | Suspend movement of recently irradiated fuel assemblies. | Immediately |
| E. One or more required MCR/ESGR EVS trains inoperable due to inoperable MCR/ESGR envelope boundary during movement of recently irradiated fuel assemblies. | E.1 | Suspend movement of recently irradiated fuel assemblies. | Immediately |
| | | | (continued) |

| | CONDITION | | REQUIRED ACTION | COMPLETION TIME |
|-----------|--|-----|------------------|-----------------|
| E. | (continued) | | | |
| <u>OR</u> | | | | |
| | Two required MCR/ESGR EVS trains inoperable during movement of recently irradiated fuel assemblies for reasons other than Condition B. | | | |
| F. | Two required MCR/ESGR EVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B. | F.1 | Enter LCO 3.0.3. | Immediately |

SURVEILLANCE REQUIREMENTS

| | | FREQUENCY | |
|----|----------|--|----------------------------|
| SR | 3.7.10.1 | Operate each required MCR/ESGR EVS train for \geq 10 continuous hours with the heaters operating. | 31 days |
| SR | 3.7.10.2 | Perform required MCR/ESGR EVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP). | In accordance with VFTP |
| SR | 3.7.10.3 | Not Used | |

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SURVEILLANCE REQUIREMENTS

| SR | 3.7.10.4 | Perform required MCR/ESGR Envelope unfiltered air inleakage testing in accordance with the MCR/ESGR Envelope Habitability Program. | In accordance with the MCR/ESGR Envelope Habitability Program |
|----|----------|---|--|
|----|----------|---|--|

3.7 PLANT SYSTEMS

3.7.13 Not Used

3.7 PLANT SYSTEMS

3.7.14 Not Used

3.7.14

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5.5 Programs and Manuals

5.5.15 <u>Containment Leakage Rate Testing Program (continued)</u>

- d. Leakage Rate acceptance criteria are:
 - 1. Prior to entering a MODE where containment OPERABILITY is required, the containment leakage rate acceptance criteria are:

 \leq 0.60 L_a for the Type B and Type C tests on a Maximum Path Basis and \leq 0.75 L_a for Type A tests.

During operation where containment OPERABILITY is required, the containment leakage rate acceptance criteria are:

 \leq 1.0 L_a for overall containment leakage rate and \leq 0.60 L_a for the Type B and Type C tests on a Minimum Path Basis.

- 2. Overall air lock leakage rate testing acceptance criterion is $\leq 0.05 L_a$ when tested at $\geq P_a$.
- e. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.
- f. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5.16 <u>Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope</u> <u>Habitability Program</u>

A MCR/ESGR Envelope Habitability Program shall be established and implemented to ensure that MCR/ESGR envelope habitability is maintained such that, with an OPERABLE MCR/ESGR EVS, MCR/ESGR envelope occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the MCR/ESGR envelope under design basis accident conditions without (continued)

5.5 Programs and Manuals

5.5.16 <u>Main Control Room/Emergency Switchgear Room Envelope Habitability</u> <u>Program (MCR/ESGR)</u> (continued)

personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent for the duration of the accident. The program shall include the following elements:

- a. The definition of the MCR/ESGR envelope and the MCR/ESGR envelope boundary.
- b. Requirements for maintaining the MCR/ESGR envelope boundary in its design condition including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air inleakage past the MCR/ESGR envelope into the MCR/ESGR envelope in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing MCR/ESGR envelope habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, etailon 0.

The following is an exception to Section C.2 of Regulatory Guide 1.197, Revision O:

- 2.C.1 Licensing Bases Vulnerability assessments for radiological, hazardous chemical and smoke, and emergency ventilation system testing were completed as documented in the UFSAR. The exceptions to the Regulatory Guides (RG) referenced in RG 1.196 (i.e., RG 1.52, RG 1.78, and RG 1.183), which were considered in completing the vulnerability assessments, are documented in the UFSAR/current licensing basis. Compliance with these RGs is consistent with the current licensing basis as described in the UFSAR.
- d. Measurement, at designated locations, of the MCR/ESGR envelope pressure relative to all external areas adjacent to the MCR/ESGR envelope boundary during the pressurization mode of operation by one train of the MCR/ESGR EVS, operating at the flow rate required by the VFTP, at a Frequency of 18 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the assessment of the MCR/ESGR envelope boundary.

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 255 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-4

<u>AND</u>

AMENDMENT NO. 236 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated March 19, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080800364), as supplemented October 7, 2008, November 17, 2008, and December 10, 2008 (ADAMS Accession Nos. ML082810512, ML083220479, and ML083460212, respectively), Virginia Electric and Power Company (the licensee) submitted a request for changes to the North Anna Power Station, Unit Nos. 1 and 2 (NAPS 1 and 2), Technical Specifications (TSs). The requested changes would delete references to the main control room/emergency switchgear room (MCR/ESGR) bottled air system from the TSs. Operation of the bottled air system will be controlled by the updated final safety analysis report (UFSAR). The proposed changes revise the TS equipment operability requirements to be consistent with the assumptions of the current dose analysis of record (AOR), performed in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.67, "Accident Source Term (AST)," and the results of the nonpressurized MCR/ESGR envelope tracer gas testing. The supplements dated October 7, 2008, November 17, 2008, and December 10, 2008, provided clarifying information that did not change the scope of the original application and the initial proposed no significant hazards consideration determination.

The proposed changes would:

- Delete TS 3.7.13, "Main Control Room (MCR)/Emergency Switchgear Room (ESGR) Bottled Air System,"
- Create TS 3.3.6, "MCR/ESGR Envelope Isolation Actuation Instrumentation," to establish the operability requirements for the MCR/ESGR envelope isolation function,
- Delete current TS 3.7.14, "Main Control Room /Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) During Movement of Recently Irradiated Fuel Assemblies," and relocate its operability requirements into current

TS 3.7.10, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) Modes 1, 2, 3, and 4."

 Revise TS 5.5.16, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program, to reflect the proposed deletions of TS 3.7.13 and TS 3.7.14."

2.0 <u>REGULATORY EVALUATION</u>

2.1 Description

The compressed dry air bottles are arranged in four banks (two per unit) to provide breathing air, which also pressurizes the envelope, for a 1-hour period. The bottled air system consists of 69 bottles per bank with two banks per unit. Three of four banks are aligned for service with the fourth bank manually isolated but available. Two trains provide the air required for 1 hour of pressurization. Upon manual initiation, receipt of a safety injection signal, or "high-high" radiation signal from the fuel building radiation monitors with the fuel building radiation automatic interlock key switch in the enable position, the MCR/ESGR envelope for Units 1 and 2 is isolated and the bottled air system is actuated. The following actions occur: 1) MCR/ESGR Normal makeup and exhaust air dampers are automatically closed, 2) supply Fan 1-HV-AC-4 and Exhaust Fan 1-HV-F-15 shut down, 3) air from three of four banks (each unit has two banks) of compressed air bottles is released, 4) two fans from the EVS start automatically in the recirculation mode on a Safety Injection Signal, and all four fans start on a High-High Radiation signal, and 5) after air from the compressed air bottles has been used, a fan from the MCR/ESGR EVS is manually realigned from the recirculation mode or placed in service to provide filtered outside make-up air, which also pressurizes the MCR/ESGR envelope to reduce inleakage.

The MCR/ESGR EVS was designed as four 100-percent capacity redundant trains that can filter and recirculate air inside the MCR/ESGR envelope, or supply filtered outside air to the MCR/ESGR envelope. The two MCR/ESGR EVS trains on the accident unit actuate automatically in recirculation on a safety injection signal. With the exceptions described below, either of these trains can also be aligned to provide filtered outside air for pressurization approximately 60 minutes after the event. If necessary, a train from the other unit can be manually actuated to provide filtered outside air to meet the pressurization requirement.

In the case of a Design Basis Accident (DBA) or Fuel-Handling Accident (FHA) during movement of recently irradiated fuel assemblies, an automatic actuation or manual actuation of airflow from the bottled air banks is initiated. Actuation of airflow from the bottled air banks also automatically: 1) isolates the normal ventilation for the MCR/ESGR envelope to maintain positive pressure in the envelope, and 2) starts all available EVS trains in recirculation mode. The required EVS trains can be aligned to provide filtered outside air and pressurization approximately 60 minutes after the event. Due to the location of the air intake for the 1-HV-F-41 train, it can not be used to provide filtered outside air. Two of the three remaining trains (1-HV-F-42, 2-HV-F-41, and 2-HV-F-42) are required for independence and redundancy. Only one EVS train is required to perform the safety function of supplying outside filtered air. Two filter train assemblies serve the MCR and two serve the ESGR (one for the Unit 1 side and one for the Unit 2 side). The filter train assemblies are designed to reduce the concentration of radioactivity entering the control room envelope after accidents. The heaters and moisture separators (demisters) are used to control humidity and, thereby, preclude degrading the charcoal filters.

2.2 Applicable Regulations and Guidance

The NRC staff considered the following regulatory bases and guidance in its review of the proposed TS changes:

- 1) Appendix A to 10 CFR Part 50, General Design Criteria (GDC):
 - GDC 13, "Instrumentation and Control," requires that "[i]nstrumentation shall be
 provided to monitor variables and systems over their anticipated ranges for normal
 operation, for anticipated operational occurrences, and for accident conditions as
 appropriate to assure adequate safety, including those variables and systems that
 can affect the fission process, the integrity of the reactor core, the reactor coolant
 pressure boundary, and the containment and its associated systems. Appropriate
 controls shall be provided to maintain these variables and systems within
 prescribed operating ranges."
 - GDC 19, "Control Room" states a "control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures."
- 2) Section 10 CFR 50.36(c)(2)(ii) states that a "technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:
 - (A) *Criterion 1*: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
 - (B) Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a [DBA] or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
 - (C) *Criterion 3*: A system, structure, or component [(SSC)] that is part of the primary success path and which functions or actuates to mitigate a [DBA] or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
 - (D) *Criterion 4*: A [SSC] which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

- 3) The conformance with Regulatory Positions C.1.1.1, "Safety Margins," and C.1.1.2, "Defense in Depth," of Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," should be maintained as follows:
 - Regulatory Position C.1.1.1: The proposed uses of an AST and the associated proposed facility modifications and changes to procedures should be evaluated to determine whether the proposed changes are consistent with the principle that sufficient safety margins are maintained, including a margin to account for analysis uncertainties.
 - Regulatory Position C.1.1.2: The proposed uses of an AST and the associated proposed facility modifications and changes to procedures should be evaluated to determine whether the proposed changes are consistent with the principle that adequate defense-in-depth is maintained to compensate for uncertainties in accident progression and analysis data. Consistency with the defense-in-depth philosophy is maintained if system redundancy, independence, and diversity are preserved commensurate with the expected frequency, consequences of challenges to the system, and uncertainties. In all cases, compliance with the GDC in Appendix A to 10 CFR Part 50 is essential.

3.0 TECHNICAL EVALUATION

3.1 Background

By letter dated April 5, 2002 (ADMAS Accession No. ML021200265), the NRC staff approved the conversion to improved TSs and the MCR/ESGR EVS and bottled air system were separated into different TSs. The licensee referred to the systems used to maintain control room habitability as the emergency habitability system (EHS), a combination of the bottled air system and the EVS. The following TSs were implemented and considered the EHS: TS 3.7.10, "MCR/ESGR EVS - Modes 1, 2, 3, and 4," TS 3.7.13, "MCR/ESGR Bottled Air System," and, TS 3.7.14, "MCR/ESGR EVS - During Movement of Recently Irradiated Fuel Assemblies." The AOR for a loss-of-coolant accident at that time established the system operability requirements, which included automatic isolation and recirculation and filtration of the MCR/ESGR envelope air with a train of EVS on a safety injection signal. The bottled air system was required to limit inleakage to less than the 10 cubic feet per minute (cfm) assumed. The MCR/ESGR EVS was then aligned to the pressurization mode to provide filtered outside air to the MCR/ESGR prior to depletion of the bottled air supply (approximately 1 hour). Although available, recirculation of the MCR/ESGR envelope air was not required for an FHA.

By letter dated June 15, 2005 (ADAMS Accession No ML051590510), the NRC staff approved changes of the DBA analyses using the AST methodology consistent with 10 CFR 50.67. The licensee states:

The AOR (for LOCA and FHA) credited only the mitigative actions in the dose analysis that include: (1) MCR/ESGR envelope inleakage is assumed at 250/400 cubic feet per minute (cfm), respectively, for LOCA/FHA, (2) automatic isolation of the MCR/ESGR envelope is assumed on safety injection and manual isolation is assumed for FHAs, (3) pressurization of the MCR/ESGR envelope is not required to limit inleakage to less than AOR limits

(tracer gas test performed in non-pressurized mode with 150 cfm \pm 3 cfm inleakage result), (4) recirculation and filtration of the MCR/ESGR envelope air is not required or credited, (5) initiation of filtered outside make up air to the MCR/ESGR envelope within one hour with the EVS is required, and (6) for a main steam line break (MSLB), steam generator tube rupture (SGTR), and reactor coolant pump (RCP) locked rotor accident, the MCR/ESGR envelope is assumed operating with normal ventilation flow and 500 cfm of additional inleakage.

In the supplement dated October 7, 2008, in response to the NRC staff's request for additional information (RAI), the licensee clarified that the normal ventilation is not required to mitigate the MSLB, SGTR, and RCP locked rotor accidents. Its operation was assumed to maximize dose by varying the flow rate over its operational range plus an additional amount for unfiltered inleakage. The normal ventilation operation assumption was made to demonstrate that the MCR/ESGR EVS was not required to mitigate the MSLB, SGTR, and RCP locked rotor accidents. Isolation of the MCR/ESGR and actuation of the MCR/ESGR EVS would reduce the consequences of those events.

The AST dose assessment, as stated above, modified the assumptions in the AOR, which in turn permitted a change to the operability requirements of the EHS. However, the licensee chose not to significantly alter the operability requirements for the MCR/ESGR EHS to be consistent with the newly approved AST at that time.

By letter dated October 31, 2007 (ADAMS Accession No. ML072680945), the NRC staff approved changes to modify the NAPS 1 and 2 TS requirements related to MCR/ESGR envelope habitability. The changes were consistent with the NRC-approved Technical Specification Task Force (TSTF) Traveler TSTF-448, Revision 3, "Control Room Habitability." The amendment modified the TS requirements related to control room emergency ventilation systems to establish more effective and appropriate actions to ensure the habitability of the control room envelope.

3.1 Deletion of TS 3.7.13

TS 3.7.13 currently provides the operability requirement, required actions, and surveillance requirement for the MCR/ESGR bottled air system. Pressurization of the MCR/ESGR is no longer necessary to limit the dose to the operators within the limits established in the AOR as approved in accordance with 10 CFR 50.67. Therefore, the MCR/ESGR bottled air system is no longer credited in the accident analyses. Additionally, TS 3.7.13 does not meet any of the criteria of 10 CFR 50.36(c)(2)(ii).

The MCR/ESGR bottled air system is no longer required to mitigate the consequences of the most limiting DBA fission product release presented in Chapter 15 of the UFSAR for bounding accident analyses. NAPS 1 and 2 continue to meet the requirements of GDC 19 of Appendix A to 10 CFR Part 50 (5 rem total effective dose equivalent). The AOR for LOCA and FHA credits only MCR/ESGR isolation function and subsequent (within 1 hour of isolation) filtered make-up air flow, when the MCR/ESGR EVS is manually realigned, to limit the dose within regulatory limits.

Section 50.36(c)(2)(ii) of 10 CFR states that a TS limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the specified criteria. The licensee stated the following to justify the proposed deletion of TS 3.7.13:

- Criterion 1 is not met since TS 3.7.13 does not cover installed instrumentation that is used to detect and indicate in the control room a significant degradation of the reactor coolant pressure boundary;
- Criterion 2 is not met because TS 3.7.13 does not cover a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;
- Criterion 3 is not met because pressurization of the MCR/ESGR is no longer necessary to limit the dose to the operators within the limits established in the AOR (the MCR/ESGR bottled air system is no longer credited in the accident analysis for limiting operator dose);
- Criterion 4 is not met because the MCR/ESGR bottled air system is not credited to ensure radiological dose criteria for the exclusion area boundary, low population zone, or control room.

The NRC staff also reviewed the licensee's statement that the bottled air system is not physically removed and its operation function would be transferred to a licensee controlled document (the UFSAR) and 10 CFR 50.59. The NRC staff concludes that system operation function controlled by the UFSAR may provide consistency with the plant-specific design and licensing documents, however, it is not a condition for approving the deletion of TS 3.7.13.

The NRC staff finds that the proposed deletion of TS 3.7.13 does not impact any plant equipment that is credited to function in the event of a bounding DBA. The proposed change is consistent with the assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67, and the results of the nonpressurized MCR/ESGR tracer gas inleakage testing. Also, the requirements contained in this TS 3.7.13 do not meet any of the criteria in 10 CFR 50.36(c)(2)(ii) regarding items for which TS limiting conditions for operation must be established.

3.1.1 Breathing Air

In supplements dated November 17, 2008, and December 10, 2008, in response to the NRC staff's RAI regarding the quality of breathing air in the control room, the licensee assessed the MCR/ESGR envelope for O_2 and CO_2 concentrations inside MCR/ESGR envelope at 1 hour following the onset of a DBA assuming 20 occupants inside the MCR/ESGR envelope. The licensee stated that environmental conditions at 1 hour are consistent with the guidelines of the 2005 American Society of Heating, Refrigerating and Air-Conditioning Engineers Handbook of Fundamentals and "Industrial Ventilation, A Manual of Recommended Practice," 22nd Edition, 1995, by American Conference of Governmental Industrial Hygienists.

The NRC staff reviewed the licensee's assessment concerning the quality of breathing air inside the MCR/ESGR envelope during the first hour of a DBA with the MCR/ESGR envelope isolated with no fresh air supply and finds that the removal of the bottled air system will not adversely effect the MCR operators or the MCR/ESGR equipment; and environmental conditions at 1 hour of a DBA are consistent with the guidelines of the 2005 American Society of Heating, Refrigerating and Air-Conditioning Engineers Handbook of Fundamentals and "Industrial Ventilation, A Manual of Recommended Practice," 22nd Edition, 1995, by American Conference of Governmental Industrial Hygienists. The assumptions regarding breathing air quality are consistent with the assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67, and the results of the nonpressurized MCR/ESGR tracer gas inleakage testing. Therefore, the NRC staff finds that NAPS 1 and 2 continues to be consistent with the guidelines of Section 6.4.III.2, "Control Room Personnel Capacity," of NUREG-0800, "Standard Review Plan (SRP)," Revision 3, March 2007, and that there will be adequate breathing air for the control room occupants inside the MCR/ESGR envelope, during the first hour of a DBA.

3.1.2 RG 1.183: Safety Margins and Defense-in-Depth

By letter dated October 7, 2008, in response to the NRC staff's RAI, the licensee provided justification on how conformance with Regulatory Position C.1.1.1, "Safety Margins," of RG 1.183 is maintained:

Currently, MCR/ESGR envelope inleakage is measured in accordance with TS 3.7.10 and TS 5.5.16. The licensee further stated that the MCR/ESGR envelope inleakage acceptance criteria are 250 cfm for LOCAs and 400 cfm for FHAs in a non-pressurized alignment. The inleakage acceptance criterion is based on the NRC-approved AST analyses for NAPS 1 and 2, which is consistent with the applicable codes and standards and provides adequate margin to account for the measurement uncertainties associated with test method required to establish the MCR/ESGR inleakage. The last measured tracer gas test result was 150 cfm ± 3 cfm with the MCR/ESGR envelope in the non-pressurized alignment.

The NRC staff reviewed the licensee's response concerning the Regulatory Position C.1.1.1, "Safety Margins," of RG 1.183, and finds it acceptable because the proposed deletion of TS 3.7.13 will be consistent with the assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67 and the results of the nonpressurized MCR/ESGR envelope tracer gas testing. Therefore, the NRC staff concludes that the proposed removal of TS 3.7.13 is consistent with the principle that sufficient safety margin, including margin to account for analysis uncertainties, is maintained.

In the RAI response dated October 7, 2008, the licensee also provided justifications for how the conformance with Regulatory Position C.1.1.2, "Defense in Depth," of RG 1.183 is maintained:

- The licensee evaluated a list of justifications including the prevention of core damage and containment failure, over reliance on programmatic activities, precluding simultaneous equipment outages, defense against potential common cause failures, degradation of independence of physical barriers, and defense against human errors, that demonstrate how the licensee maintains conformance with Regulatory Position C.1.1.2.
- Based on an engineering analysis of the proposed changes, due to the control room structural integrity and containment performance, the MCR/ESGR envelope inleakage acceptability is not impacted by the proposed TS changes and the reliability of the defenses against high inleakage is not impacted.
- The original LOCA analysis modeled the release of the entire core inventory at the initiation of the event, and the containment was designed to return to sub-atmospheric pressure within 1 hour.

- The MCR/ESGR bottled air system was designed to operate during the 1 hour period that the containment was above atmospheric pressure and prevent unfiltered inleakage into the control room. Since the original LOCA analysis, the license and design bases have changed. As a result of addressing Generic Safety Issue-191, "Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance," the containment systems were redesigned and it can take up to 6 hours for the containment to return to sub-atmospheric pressure. Additionally, in an AST LOCA analysis, the majority of the core release to the containment atmosphere occurs between 0.5 and 1.8 hours. The licensee stated that this renders the first hour pressurization of the MCR/ESGR envelope of little value.
- NAPS 1 and 2 now require MCR/ESGR envelope inleakage measurement in a nonpressurized alignment with an acceptance criterion of 250 cfm in accordance with TS 3.7.10 and TS 5.5.16. The AST core release timing and the extended period of containment pressurization rendered the bottled air system obsolete.

The NRC staff reviewed the licensee's justification for conformance with Regulatory Position C.1.1.2, "Defense in Depth," of RG 1.183, and finds it acceptable because the AST core release timing and the extended period of containment pressurization resulted in the bottled air system no longer being required. The proposed deletion of TS 3.7.13 will revise the TS equipment operability requirements to be consistent with assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67 and the results of the nonpressurized MCR/ESGR envelope tracer gas testing. Therefore, the NRC staff concludes that the removal of TS 3.7.13 will not adversely impact defense-in-depth.

3.2 Creation of TS 3.3.6, MCR/ESGR Envelope Isolation Actuation Instrumentation

The licensee proposed to create TS 3.3.6, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation," to establish the operability requirements for the MCR/ESGR envelope isolation function because the isolation function is credited in the current dose AOR.

By letter dated September 10, 2003 (ADAMS Accession No. ML0302530204), the NRC staff approved elimination of the TS requirements for the control room emergency bottled air pressurization system for Beaver Valley Power Station, Units 1 and 2 (Beaver Valley). The Beaver Valley EVS is similar in function to the NAPS EVS. The NRC staff finds that the proposed TS 3.3.6 is consistent with TS 3.3.7, "Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation," for Beaver Valley.

The NRC staff evaluated all the statements and data in the proposed TS 3.3.6 and found that it is consistent with similar statements and data in the current TS 3.7.13. The NRC staff also finds that the NAPS 1 and 2 TS 3.7.13 is consistent with TS 3.3.7, "Control Room Emergency Filtration System (CREFS) Actuation Instrumentation," in NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 3, and meets the requirements of 10 CFR 50.36.

The proposed creation of TS 3.3.6 is consistent with GDC 13 and with the assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67 and the results of the nonpressurized MCR/ESGR tracer gas inleakage testing; therefore the NRC staff finds it acceptable.

3.3 Incorporation of TS 3.7.14 into TS 3.7.10

The licensee proposed to relocate the operability requirements of TS 3.7.14, "MCR/ESGR Emergency Ventilation System (EVS), During Movement of Recently Irradiated Fuel Assemblies," to TS 3.7.10, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) EVS Modes 1, 2, 3, and 4." The licensee proposed to revise current TS 3.7.10 as follows:

- 1) Delete the mode applicability from the title since the modes and conditions of applicability are already addressed in TS 3.7.10.
- 2) Revise the applicability of TS 3.7.10, MCR/ESGR to include "during movement of recently irradiated fuel assemblies." The operability requirements from TS 3.7.14 are incorporated into TS 3.7.10.
- Include Modes 1, 2, 3, 4 in CONDITION B and CONDITION C to establish applicability of Condition B and Condition C, such that TS 3.7.10 addresses all modes and conditions of applicability.
- 4) Add a REQUIRED ACTION for CONDITION D during movement of recently irradiated fuel assemblies consistent with the proposed TS 3.3.6, which requires isolation of the MCR/ESGR envelope and start a train of EVS within 1 hour. These actions will provide adequate protection for the MCR/ESGR room occupants during a fuel-handling accident and not impact fuel-handling operations.
- 5) Incorporate the CONDITIONS, REQUIRED ACTIONS, and COMPLETION TIMES for an inoperable MCR/ESGR envelope boundary or two EVS trains when moving recently irradiated fuel.

TS 3.7.10 contains requirements for the MCR/ESGR EVS during modes 1, 2, 3, and 4. TS 3.7.14 contains requirements fro the same system, but only applies during movement of recently irradiated fuel assemblies. The operability requirements, required actions, and surveillance requirements of existing TS 3.7.14 are relocated entirely into TS 3.7.10, the applicability is changed accordingly. The NRC staff finds that the proposed incorporation of TS 3.7.14 into TS 3.7.10 and deletion of TS 3.7.14 meets the requirements of 10 CFR 50.36. The proposed change does not impact plant equipment which is credited to function in the event of a bounding design-basis accident and is consistent with the assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67, and the results of the nonpressurized MCR/ESGR tracer gas inleakage testing.

3.4 <u>Revision of TS 5.5.16</u>

The licensee proposed to "remove the discussion of the Emergency Habitability System (EHS) and Bottled Air System from the first paragraph in TS 5.5.16 MCR/ESGR Envelope Habitability Program. The Bottled Air System is no longer required to be included in the TS, thus the EHS only consists of the MCR/ESGR EVS."

This change is necessary to make TS 5.5.16 consistent with the proposed removal of the bottled air system since it is no longer credited in the current dose AOR as performed in accordance with 10 CFR 50.67. The NRC staff finds this change acceptable.

The licensee also proposed to remove the term "18 months" from the assessment requirement of TS 5.5.16.d for the MCR/ESGR pressure testing (MCR/ESGR Habitability Program) to avoid confusion with the MCR/ESGR habitability 3-year assessment frequency established by the Regulatory Guides incorporated into TS 5.5.16.c. The MCR/ESGR envelope boundary assessment is performed every 3 years using the data from the MCR/ESGR differential pressure tests that are performed every 18 months.

The NRC staff finds this acceptable because it clarifies the intent of the TS and improves the usability and quality of the TS.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (73 FR 21661). Accordingly, the 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.

6.0 <u>CONCLUSION</u>

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.

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Principal Contributors: S. Mazumbar, NRR J. Raval, NRR

Date: March 25, 2009

Mr. David A. Christian President and Chief Nuclear Officer Virginia Electric and Power Company Innsbrook Technical Center 5000 Dominion Boulevard Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING DELETION OF TECHNICAL SPECIFICATION 3.7.13 – MAIN CONTROL ROOM/EMERGENCY SWITCHGEAR ROOM BOTTLED AIR SYSTEM (TAC NOS. MD8354 AND MD8355)

Dear Mr. Christian:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 255 and 256 to Renewed Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2. The amendments change the Technical Specifications (TSs) in response to your application dated March 19, 2008, as supplemented October 7, 2008, November 17, 2008, and December 10, 2008.

These amendments revise the TSs to 1) delete TS 3.7.13, "MCR/ESGR Bottled Air System," 2) create TS 3.3.6, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation," to establish the operability requirements for the MCR/ESGR envelope isolation function, and 3) incorporate TS 3.7.14, "MCR/ESGR Emergency Ventilation During Movement of Recently Irradiated Fuel Assemblies," into TS 3.7.10, "MCR/ESGR Emergency Ventilation System." The changes revise the TSs to be consistent with the assumptions of the current dose analysis of record, performed in accordance with Title 10 of the *Code of Federal Regulations*, Section 50.67, "Accident Source Term," and the results of the nonpressurized MCR/ESGR envelope tracer gas testing.

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, /**RA**/ John Stang, Senior Project Manager Plant Licensing Branch II-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosures:

- 1. Amendment No. 255 to NPF-4
- 2. Amendment No. 236 to NPF-7
- 3. Safety Evaluation

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| | ADAMS Accession No.: | ML090690164 | | *transmitted by memo dated | | |
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| DATE | 3/23/09 | 3/23/09 | 3/16/09 | 12/18/08* | 3/12/09* | |
| OFFICE | NRR/ITSB/BC | NRR/AADB/BC | NRR/SBPB/BC | OGC | NRR/LPL2-1/BC | |
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SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING DELETION OF TECHNICAL SPECIFICATION 3.7.13 – MAIN CONTROL ROOM/EMERGENCY SWITCHGEAR ROOM BOTTLED AIR SYSTEM (TAC NOS. MD8354 AND MD8355)

LETTER DATED: March 25, 2009

AMENDMENT NOS.: 255 and 236

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