



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

November 27, 2018

Mr. Daniel G. Stoddard
Senior Vice President and Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2 – ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATIONS REGARDING VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS IN ACCORDANCE WITH TSTF-522 (EPID L-2018-LLA-0015)

Dear Mr. Stoddard:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 280 and 263 to Renewed Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station (NAPS) Unit Nos. 1 and 2, respectively. These amendments are in response to your application dated January 22, 2018, as supplemented by letter dated March 26, 2018.

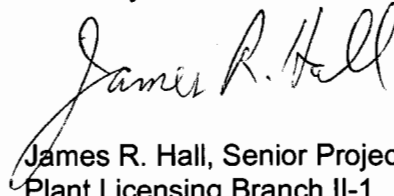
The amendments revise NAPS Technical Specifications (TS) 3.7.10, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS)," and TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," to adopt the Technical Specifications Task Force Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month." The amendments further modify TS 5.5.10, "Ventilation Filter Testing Program (VFTP)," to remove the electric heater output test and to increase the specified relative humidity (RH) for the charcoal testing for the MCR/ESGR EVS from the current 70 percent to 95 percent RH. Additionally, the amendments make an administrative change to update a reference in the Environmental Protection Plan to reflect current numbering in Title 10 of the *Code of Federal Regulations*.

D. Stoddard

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

Sincerely,

A handwritten signature in black ink that reads "James R. Hall". The signature is written in a cursive style with a large, looping initial "J".

James R. Hall, 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. 280 to NPF-4
2. Amendment No. 263 to NPF-7
3. Safety Evaluation

cc: Listserv



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. 280
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 January 22, 2018, as supplemented by letter dated March 26, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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.

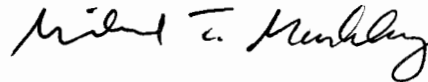
2. Accordingly, the license is amended by changes to paragraph 2.C (2) of Renewed Facility Operating License No. NPF-4, as indicated in the attachment to this license amendment, and is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendices A, as revised through Amendment No. 280, 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Operation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-4
and Technical Specifications

Date of Issuance: November 27, 2018



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. 263
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 January 22, 2018, as supplemented by letter dated March 26, 2018, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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.

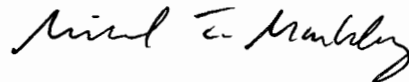
2. Accordingly, the license is amended by changes to paragraph 2.C (2) of Renewed Facility Operating License No. NPF-7, as indicated in the attachment to this license amendment, and is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 263, 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Operation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-7
and Technical Specifications

Date of Issuance: November 27, 2018

ATTACHMENT TO
NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2
LICENSE AMENDMENT NO. 280
RENEWED FACILITY OPERATING LICENSE NO. NPF-4
DOCKET NO. 50-338
AND LICENSE AMENDMENT NO. 263
RENEWED FACILITY OPERATING LICENSE NO. NPF-7
DOCKET NO. 50-339

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

NPF-4, page 3
NPF-7, page 3

Insert

NPF-4, page 3
NPF-7, page 3

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3.7.10-3
3.7.12-4
5.5-11

Insert

3.7.10-3
3.7.12-4
5.5-11

Replace the following pages of the Appendix B Environmental Protection Plan with the attached revised pages for each unit. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Unit 1, 4-1
Unit 2, 4-1

Insert

Unit 1, 4-1
Unit 2, 4-1

- (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 2940 megawatts (thermal).
 - (2) Technical Specifications
Technical Specifications contained in Appendix A, as revised through Amendment No. 280 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

- (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, 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 2940 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 263 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 insurance 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

ACTIONS

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

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|--|
| <p>SR 3.7.10.1 Operate each required MCR/ESGR EVS train for ≥ 15 continuous minutes.</p> | <p>In accordance with the Surveillance Frequency Control Program</p> |
| <p>SR 3.7.10.2 Perform required MCR/ESGR EVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).</p> | <p>In accordance with VFTP</p> |
| <p>SR 3.7.10.3 Not Used</p> | |

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|------------------------------|
| D. Two ECCS PREACS trains inoperable due to inoperable ECCS pump room boundary affecting filtration capability. | D.1.1 Verify ECCS leakage log is less than the maximum allowable unfiltered leakage. <u>AND</u> | 1 hour |
| | D.1.2 Verify by field walkdown that ECCS leakage is less than the maximum allowable unfiltered leakage. <u>AND</u> | Once per 12 hours thereafter |
| | D.1.3 Restore ECCS pump room boundary to OPERABLE status. <u>OR</u> | 14 days |
| | D.2 Restore ECCS pump room boundary to OPERABLE status. | 24 hours |
| E. Required Action and associated Completion Time not met. | E.1 Be in MODE 3. <u>AND</u> | 6 hours |
| | E.2 Be in MODE 5. | 36 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|---|---|
| SR 3.7.12.1 Operate each ECCS PREACS train for ≥ 15 continuous minutes with the heaters operating. | In accordance with the Surveillance Frequency Control Program |

5.5 Programs and Manuals

5.5.10 Ventilation Filter Testing Program (VFTP)

c. (continued)

value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and relative humidity specified below.

| <u>ESF Ventilation System</u> | <u>Penetration</u> | <u>RH</u> |
|-------------------------------|--------------------|-----------|
| MCR/ESGR EVS | 2.5% | 95% |
| ECCS PREACS | 5% | 70% |

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with ANSI N510-1975 at the system flowrate specified below.

| <u>ESF Ventilation System</u> | <u>Delta P</u> | <u>Flowrate</u> |
|-------------------------------|----------------|-----------------|
| MCR/ESGR EVS | 4 inches W.G. | 1000 ± 10% cfm |
| ECCS PREACS | 5 inches W.G. | ≤ 39,200 cfm |

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies. -----

5.5.11 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Gaseous Waste System, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or

(continued)

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and promptly reported to the NRC in accordance with 10 CFR 50.72(b)(2)(xi) followed by a written report as specified in Subsection 5.4.2. The following are examples: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, significant increase in nuisance organisms or conditions and unanticipated or emergency discharge of waste water or chemical substances.

4.2 Environmental Monitoring

4.2.1 Herbicide Application

The use of herbicides within the corridor rights-of-way as described and evaluated in the FES-OL dated April 1973 shall conform to the approved use of selected herbicides as registered by the Environmental Protection Agency and approved by State authorities and applied as directed by said authorities.

Records shall be maintained in the appropriate division office concerning herbicide use. Such records shall include the following information: commercial and chemical names of materials used; concentration of active material in formulations diluted for field use; diluting substances other than water; rates of application; method and frequency of application; location; and the date of application. Such records shall be maintained for a period of 5 years and be made readily available to the NRC upon request. There shall be no routine reporting requirement associated with this condition.

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UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 280 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-4

AND

AMENDMENT NO. 263 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 January 22, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18029A118), as supplemented by letter dated March 26, 2018 (ADAMS Accession No. ML18092A081), Virginia Electric and Power Company (the licensee) submitted a request for changes to the Technical Specifications (TSs) for the North Anna Power Station (North Anna), Unit Nos. 1 and 2. The proposed changes would revise TS 3.7.10, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS)," and TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)," to adopt the Technical Specifications Task Force Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316). The proposed amendments would further modify TS 5.5.10, "Ventilation Filter Testing Program (VFTP)," to remove the electric heater output test (TS 5.5.10.e) and to increase the specified relative humidity (RH) for the charcoal testing for the MCR/ESGR EVS from the current 70 percent to 95 percent RH (TS 5.5.10.c.). Additionally, the proposed amendments would make an administrative change to update a reference in the Environmental Protection Plan to reflect current numbering in Title 10 of the *Code of Federal Regulations* (10 CFR).

2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public if a design-basis event were to occur. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the subsystems and monitoring the response of the overall system, as well as testing individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of gaseous iodine (elemental iodine and organic iodides) that may be radioactive.

The licensee has proposed revising the SRs that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the SFCP. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The regulatory requirements for design and testing of these systems are contained in:

- 10 CFR 50.67, "Accident source term"
- 10 CFR Part 100, "Reactor Site Criteria"
- 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants"
 - Criterion 19, "Control room"
 - Criterion 41, "Containment atmosphere cleanup"
 - Criterion 42, "Inspection of containment atmosphere cleanup systems"
 - Criterion 43, "Testing of containment atmosphere cleanup systems" and
 - Criterion 61, "Fuel storage and handling and radioactivity control"

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 states that:

Each ESF [engineered-safety- feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters.

The purpose of this position is to reduce the moisture buildup in the system and thereby enhance efficiency in the event the system is called upon to perform its design basis function. Standard Technical Specifications (STS) SRs 3.6.11.1, 3.6.13.1, 3.7.10.1, 3.7.12.1, 3.7.13.1, and 3.7.14.1 currently require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every 31 days. Operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

The NRC staff was informed subsequently that 10 continuous hours of system operation could dry out the charcoal adsorber for a brief period of time, however, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and, subsequently, issued NRC Generic Letter (GL) 99-02: "Laboratory Testing of Nuclear-Grade Activated Charcoal" (ADAMS Accession No. ML082350935 and errata sheet at Accession No. ML031110094). GL 99-02 requested licensees to confirm their charcoal testing protocols accurately reflect the adsorber gaseous activity capture capability. GL 99-02 also requested the licensees to account for the effects of moisture accumulation in adsorbers.

The NRC staff updated RG 1.52 to include the new information. RG 1.52, Revision 3 (ADAMS Accession No. ML011710176), Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

Current testing requirements for the air filtration and adsorption systems at North Anna state that the systems should be operated for at least 10 continuous hours with heaters operating at a frequency controlled by the Surveillance Frequency Control Program (SFCP). These requirements are based on U.S. Nuclear Regulatory Commission (NRC) staff guidance for testing air filtration and adsorption systems that has been superseded. The new NRC staff guidance (RG 1.52, Revision 3), states at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent. Plants that test ventilation system adsorption at a relative humidity of 95 percent do not require heaters for the ventilation system to perform its specified safety function and the bracketed phrase "with heaters operating" is not included in the surveillance requirements (SRs).

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to reduce the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects can be accounted for in the Ventilation Filter Testing Program by performing testing at a relative humidity of 95 percent. The current North Anna, TS 5.5.10 Ventilation Filter Testing Program requires testing charcoal adsorbers at a relative humidity of 70 percent. The licensee proposed changes to TS 5.5.10.c to justify removal of the requirement to operate heaters from SRs 3.7.10.1. Specifically, the licensee proposed to revise the relative humidity testing requirements for the MCR/ESGR EVS adsorbers from 70 percent relative humidity to 95 percent relative humidity. The licensee also proposed removal of TS 5.5.10.e, which contains MCR/ESGR EVS heater testing requirements.

The NRC's regulatory requirements related to the content of the TS are contained in 10 CFR 50.36. The regulations in 10 CFR 50.36 require that the TS include items in the following categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs are requirements relating to test, calibration, or inspection, to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Revision 4, (ADAMS Accession No. ML12100A222).

3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS, as modified by TSTF-522, Revision 0, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in RG 1.52, Revision 3. The proposed changes would require at least 15 minutes of system operation. The NRC staff found that the proposed changes are consistent with the guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory guidance in the STS, as modified by TSTF-522, Revision 0. The proposed changes adopted the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431 by TSTF-522, Revision 0. The NRC staff found that the proposed changes are consistent with guidance in the STS, as modified by TSTF-522, Revision 0.

The NRC staff noted that TSTF-522, Revision 0, did not evaluate changes to testing criteria in the VFTP. In its letter dated March 26, 2018, the licensee provided an evaluation of the proposed changes to the VFTP, which would justify removal of the requirement to operate heaters from SRs 3.7.10.1, as well as removal of TS 5.5.10.e, which contains MCR/ESGR EVS heater testing requirements.

The licensee stated that filter testing for the MCR/ESGR EVS is currently performed in accordance with American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear Grade Activated Carbon." The guidance provided in ASTM D3803-1989 indicates that an increase in the relative humidity for the test would result in an increase the amount of methyl iodide penetration of the charcoal adsorber. Specifically, an increase in relative humidity from 70% to 95% would increase the average penetration of methyl iodide from 0.10% to 0.56%, $\pm 11\%$. However, that value remains well within the methyl iodide penetration of 2.5% specified in TS 5.5.10.c. The licensee further stated that the North Anna radiological accident analysis assumes MCR/ESGR EVS methyl iodide filter efficiency of 95%, which is consistent with the safety factor of at least 2 as required by Note 4 of RG 1.52, Revision 3. The NRC staff concludes the information provided by the licensee supports the change of humidity testing requirements for the MCR/ESGR EVS adsorbers from 70% relative humidity to 95% relative humidity in TS 5.5.10.c, and the removal of heater testing requirements from SR 3.7.10.1 and TS 5.5.10.e.

The NRC staff compared the proposed changes to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed changes reduce the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure the adsorbers would capture gaseous activity. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the VFTP, is sufficient to justify operability of the system and all its components in SRs 3.7.10.1 and 3.7.12.1. The NRC staff finds that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems

and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concluded the proposed changes acceptable.

The NRC staff reviewed the licensee's proposed change to Appendix B, "Environmental Protection Plan," of the Renewed Facility Operating Licenses, to reflect current numbering in 10 CFR 50.72. The licensee proposed changing the reference to 10 CFR 50.72(b)(2)(vi) in Section 4.1 of Appendix B to 10 CFR 50.72(b)(2)(xi). The NRC staff determined the proposed change is administrative, because it correctly reflects the current numbering in 10 CFR 50.72, and is therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Commonwealth of Virginia official was notified of the proposed issuance of the amendments on October 17, 2018. The state official confirmed that the Commonwealth 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 published in the *Federal Register* on September 11, 2018 (83 FR 45988). 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 CONCLUSION

The NRC staff 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) there is reasonable assurance that 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: M. Hamm, NRR

Date: November 27, 2018

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2 – ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATIONS REGARDING VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS IN ACCORDANCE WITH TSTF-522 (EPID L-2018-LLA-0015)

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