



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

October 29, 2009

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

SUBJECT: SURRY POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING REMOVAL OF MAIN CONTROL ROOM (MCR) BOTTLED AIR SYSTEM (TAC NOS. MD9891 AND MD9918)

Dear Mr. Heacock:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 266 to Renewed Facility Operating License No. DPR-32 and Amendment No. 265 to Renewed Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments change the Technical Specifications (TSs) in response to your application dated October 9, 2008 (Agencywide Document Access and Management System (ADAMS) Accession No. ML082890529), as supplemented by letter dated November 17, 2008 (ADAMS Accession No. ML083220479), and December 10, 2008 (ADAMS Accession No. ML083460212).

These amendments revise the TSs to 1) delete TS 3.19, "Main Control Room Bottled Air System," 2) add new TS 3.7F, "MCR/ESGR [Main Control Room/Emergency Switchgear Room] Envelope Isolation Actuation Instrumentation," to provide operability requirements for the manual initiation of the MCR/ESGR envelope isolation actuation instrumentation, 3) replace existing TS 3.10.A.12 and TS 3.10. B.5, which include operability requirements for the MCR bottled air system during refueling operations and irradiated fuel movement, respectively, with TS operability requirements for manual actuation of the MCR/ESGR envelope isolation actuation instrumentation during these conditions, 4) replace existing Item 15, "Control Room Bottled Air Test," of TS Table 4.1-2A, "Minimum Frequency for Equipment Tests," with new item 15, "MCR/ESGR Envelope Isolation Actuation Instrumentation – Manual," surveillance requirements, 5) revise TS 6.4.R, "Main Control Room/ Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program," to delete reference to the MCR bottled air system and the emergency habitability system (EHS), and 6) delete Specification 3.19, "Main Control Room Bottled Air System," from the TS Table of Contents.

D. Heacock

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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,

A handwritten signature in black ink that reads "Karen Cotton". The signature is written in a cursive, flowing style.

Karen Cotton , Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

Enclosures:

1. Amendment No. 266 to DPR-32
2. Amendment No. 265 to DPR-37
3. Safety Evaluation

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 266
Renewed License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric and Power Company (the licensee) dated October 9, 2008, as supplemented by letters dated 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 3.B of Renewed Facility Operating License No. DPR-32 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. DPR-32
and the Technical Specifications

Date of Issuance: October 29, 2009



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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 265
Renewed License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Virginia Electric and Power Company (the licensee) dated October 9, 2008, as supplemented by letters dated 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.

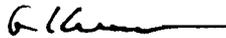
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Renewed Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 265 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes License No. DPR-37
and the Technical Specifications

Date of Issuance: October 29, 2009

ATTACHMENT
TO LICENSE AMENDMENT NO. 266
RENEWED FACILITY OPERATING LICENSE NO. DPR-32
DOCKET NO. 50-280
AND
TO LICENSE AMENDMENT NO. 265
RENEWED FACILITY OPERATING LICENSE NO. DPR-37
DOCKET NO. 50-281

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

Remove Pages

License

License No. DPR-32, page 3
License No. DPR-37, page 3

TSs

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Insert Pages

License

License No. DPR-32, page 3
License No. DPR-37, page 3

TSs

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3.7-9b
3.7-9c
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3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2546 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.

E. Deleted by Amendment 65

F. Deleted by Amendment 71

G. Deleted by Amendment 227

H. Deleted by Amendment 227

I. Fire Protection

The licensee shall implement and maintain in effect the provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report and as approved in the SER dated September 19, 1979, (and Supplements dated May 29, 1980, October 9, 1980, December 18, 1980, February 13, 1981, December 4, 1981, April 27, 1982, November 18, 1982, January 17, 1984, February 25, 1988, and

- E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- 3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:
 - A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2546 megawatts (thermal).
 - B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 265 , are hereby incorporated in this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.
 - C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.
 - D. Records

The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.
 - E. Deleted by Amendment 54
 - F. Deleted by Amendment 59 and Amendment 65
 - G. Deleted by Amendment 227
 - H. Deleted by Amendment 227

TECHNICAL SPECIFICATION
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3.18	MOVABLE INCORE INSTRUMENTATION	TS 3.18-1
3.19	DELETED	
3.20	SHOCK SUPPRESSORS (SNUBBERS)	TS 3.20-1
3.21	MAIN CONTROL ROOM/EMERGENCY SWITCHGEAR ROOM (MCR/ESGR) EMERGENCY VENTILATION SYSTEM (EVS)	TS 3.21-1
3.22	AUXILIARY VENTILATION EXHAUST FILTER TRAINS	TS 3.22-1
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4.8	AUXILIARY FEEDWATER SYSTEM	TS 4.8-1
4.9	RADIOACTIVE GAS STORAGE MONITORING SYSTEM	TS 4.9-1
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4.12	VENTILATION FILTER TESTS	TS 4.12-1
4.13	RCS OPERATIONAL LEAKAGE	TS 4.13-1
4.14	DELETED	

2. With less than the minimum number of explosive gas monitoring instrumentation channels OPERABLE, take the action shown in Table 3.7-5(a). Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission (Region II) to explain why the inoperability was not corrected in a timely manner.
- E. Prior to the Reactor Coolant System temperature and pressure exceeding 350°F and 450 psig, respectively, the accident monitoring instrumentation listed in Table 3.7-6 shall be OPERABLE in accordance with the following:
1. With one required channel inoperable, either restore the inoperable channel to OPERABLE status within 30 days or submit a report to the NRC within the next 14 days. The report shall outline the cause of inoperability and the plans and schedule for restoring the inoperable channel to OPERABLE status.
 2. With two required channels inoperable, either:
 - a. Restore an inoperable channel(s) to OPERABLE status within 7 days or initiate the preplanned alternate method of monitoring the appropriate function and submit a report to the NRC within the next 14 days. The report shall outline the preplanned alternate method of monitoring the function, the cause of inoperability, and the plans and schedule for restoring an inoperable channel to OPERABLE status.
 - b. If no preplanned alternate method of monitoring the function is available, restore an inoperable channel(s) to OPERABLE status within 7 days or be in HOT SHUTDOWN within the next 6 hours and be less than 350°F and 450 psig within the following 12 hours.
- F. Two manual actuation trains of the Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation shall be OPERABLE whenever:
- T_{avg} (average Reactor Coolant System (RCS) temperature) exceeds 200°F, or
 - During movement of irradiated fuel.

Note: Automatic actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation is addressed as part of the Safety Injection Instrument Operating Conditions included in TS Table 3.7-2, "Engineered Safeguards Action Instrument Operating Conditions," Functional Unit No. 1.

1. For unit operation when T_{avg} exceeds 200°F:
 - a. With one train inoperable, isolate the MCR/ESGR envelope normal ventilation within seven (7) days or be in at least HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

- b. With two trains inoperable, isolate the MCR/ESGR envelope normal ventilation immediately or be in at least HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.
2. During the movement of irradiated fuel assemblies:
 - a. With one train inoperable, within seven (7) days either isolate the MCR/ESGR envelope normal ventilation or suspend movement of irradiated fuel assemblies.
 - b. With two trains inoperable, immediately isolate the MCR/ESGR envelope normal ventilation or immediately suspend movement of irradiated fuel assemblies.

Basis

Instrument Operating Conditions

During plant operations, the complete instrumentation system will normally be in service. Reactor safety is provided by the Reactor Protection System, which automatically initiates appropriate action to prevent exceeding established limits. Safety is not compromised, however, by continuing operation with certain instrumentation channels out of service since provisions were made for this in the plant design. This specification outlines the limiting conditions for operation necessary to preserve the effectiveness of the Reactor Protection System when any one or more of the channels is out of service.

Almost all Reactor Protection System channels are supplied with sufficient redundancy to provide the capability for channel calibration and test at power. Exceptions are backup channels such as reactor coolant pump breakers. The removal of one trip channel on process control equipment is accomplished by placing that channel bistable in a tripped mode (e.g., a two-out-of-three circuit becomes a one-out-of-two circuit). The Nuclear Instrumentation System (NIS) channels are not intentionally placed in a tripped mode since the test signal is superimposed on the normal detector signal to test at power. Testing of the NIS power range channel requires: (a) bypassing the dropped-rod protection from NIS, for the channel being tested, (b) placing the $\Delta T/T_{avg}$ protection channel set that is being fed from the NIS channel in the trip mode, and (c) defeating the power mismatch section of T_{avg} control channels when the appropriate NIS channel is being tested. However, the Rod Position System and remaining NIS channels still provide the dropped-rod protection. Testing does not trip the system unless a trip condition exists in a concurrent channel.

Non-Essential Service Water Isolation System

The operability of this functional system ensures that adequate intake canal inventory can be maintained by the Emergency Service Water Pumps. Adequate intake canal inventory provides design service water flow to the recirculation spray heat exchangers and other essential loads (e.g., control room area chillers, charging pump lube oil coolers) following a design basis loss of coolant accident with a coincident loss of offsite power. This system is common to both units in that each of the two trains will actuate equipment on each unit.

Clarification of Operator Actions

The Operator Actions associated with Functional Units 10 and 16 on Table 3.7-1 require the unit to be reduced in power to less than the P-7 setpoint (10%) if the required conditions cannot be satisfied for either the P-8 or P-7 permissible bypass conditions. The requirement to reduce power below P-7 for a P-8 permissible bypass condition is necessary to ensure consistency with the out of service and shutdown action times assumed in the WCAP-10271 and WCAP-14333P risk analyses by eliminating the potential for a scenario that would allow sequential entry into the Operator Actions (i.e., initial entry into the Operator Action with a reduction in power to below P-8, followed by a second entry into the Operator Action with a reduction in power to below P-7). This scenario would permit sequential allowed outage time periods that may result in an additional 72 hours that was not assumed in the risk analysis to place a channel in trip or to place the unit in a condition where the protective function was not necessary.

Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Isolation Actuation Instrumentation

BACKGROUND - The MCR/ESGR Envelope Isolation Function provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity. During normal operation, the Service Building Ventilation System and the Main Control Room (MCR) and Emergency Switchgear Room (ESGR) Air Conditioning System (ACS) provide unfiltered makeup air and cooling, respectively, for the MCR/ESGR envelope. Upon receipt of a MCR/ESGR Envelope Isolation Actuation signal from either unit's Safety Injection (SI) signal or from manual actuation, the following actions occur: 1) the MCR/ESGR envelope normal ventilation intake and exhaust ducts are isolated to prevent unfiltered makeup air from entering the MCR/ESGR envelope, 2) the normal ventilation supply and exhaust fans are shut down, and 3) adjacent area ventilation fans are shut down. The MCR/ESGR Emergency Ventilation System (EVS) can then be placed into service when required to provide a source of filtered makeup air to the MCR/ESGR envelope. The MCR/ESGR EVS is described in the Bases for TS 3.21, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS)."

There are two independent and redundant trains of manual actuation instrumentation for MCR/ESGR Envelope Isolation. Each manual actuation train consists of two damper actuation switches and the interconnecting wiring to the actuation circuitry as follows: 1) normal ventilation dampers 1-VS-MOD-103A (supply) and 1-VS-MOD-103D (exhaust), and 2) normal ventilation dampers 1-VS-MOD-103C (supply) and 1-VS-MOD-103B (exhaust). Automatic actuation of the MCR/ESGR Envelope Isolation Function is addressed as part of the SI system in Table 3.7-2, "Engineered Safeguards

Action Instrument Operating Conditions," Functional Unit No. 1.

APPLICABLE SAFETY ANALYSES - The MCR/ESGR envelope must be kept habitable for the operators stationed there during accident recovery and post accident operations. The MCR/ESGR Envelope Isolation Actuation Instrumentation automatically acts to terminate the supply of unfiltered outside air on an SI signal and is manually actuated for a Fuel Handling Accident (FHA).

In REACTOR OPERATION conditions where T_{avg} exceeds 200°F, the safety analyses for a Loss of Coolant Accident, Main Steam Line Break, and a Steam Generator Tube Rupture assume automatic isolation of the MCR/ESGR envelope on an SI signal and manual initiation of filtered air flow provided by the MCR/ESGR EVS within 1 hour. No credit is taken for the pressurization provided by the MCR/ESGR EVS. The safety analysis for a FHA assumes manual isolation of the MCR/ESGR envelope upon indication that a FHA has occurred and manual initiation of the MCR/ESGR EVS to supply filtered air flow within 1 hour. MCR/ESGR envelope isolation is not credited for a Locked Rotor Accident. Total ventilation inflow of 1500 cfm is assumed: 1000 cfm of filtered emergency supply fan flow plus 500 cfm of unfiltered inleakage.

During the movement of irradiated fuel, the accident analysis assumes manual isolation of the MCR/ESGR envelope upon indication that a FHA has occurred and manual initiation of the MCR/ESGR EVS to supply filtered air flow within 1 hour.

Normal ventilation is assumed during a toxic gas or smoke incident. MCR/ESGR envelope isolation and manual initiation of filtered air from the MCR/ESGR EVS is at the discretion of the MCR operators to mitigate the consequences of these events.

The MCR/ESGR Envelope Isolation Actuation Instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LIMITING CONDITIONS FOR OPERATION (LCO) - The LCO requirements ensure that instrumentation necessary to initiate MCR/ESGR envelope isolation is OPERABLE.

1. Manual Actuation

The LCO requires two trains to be OPERABLE. The operator can initiate MCR/ESGR envelope isolation at any time by closing dampers 1-VS-MOD-103A (supply) and 1-VS-MOD-103D (exhaust) [Train A] or 1-VS-MOD-103C (supply) and 1-VS-MOD-103B (exhaust) [Train B] from the MCR. This action will cause actuation of components in the same manner as the automatic actuation signal, i.e., isolate the normal ventilation supply and exhaust ducts, trip the normal ventilation supply and exhaust fans, and trip the adjacent non-safety-related Turbine/Service Building ventilation fans.

The LCO for manual actuation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability. Each train consists of two damper control switches and the interconnecting wiring to the actuation circuitry.

2. Safety Injection

Refer to Table 3.7-2, "Engineered Safeguards Action Instrument Operating Conditions," Functional Unit No. 1, for all automatic initiating functions and requirements.

APPLICABILITY - The MCR/ESGR Envelope Isolation Function must be OPERABLE in REACTOR OPERATION conditions where T_{avg} exceeds 200°F to provide the required MCR/ESGR envelope isolation assumed in the applicable safety analyses. In COLD SHUTDOWN and REFUELING OPERATION, when no fuel movement involving irradiated fuel is taking place, there are no requirements for MCR/ESGR Envelope Isolation Actuation Instrumentation operability consistent with the safety analyses assumptions applicable in these REACTOR OPERATION conditions.

In addition, the Manual Actuation function of the MCR/ESGR Envelope Isolation Actuation Instrumentation is required to be OPERABLE when moving irradiated fuel.

ACTIONS

3.7.F.1.a

This TS requirement applies to the failure of one manual MCR/ESGR Envelope Isolation Actuation Instrumentation train.

If one train is inoperable, seven (7) days are permitted to restore it to OPERABLE status. In this condition, the remaining required OPERABLE manual MCR/ESGR Envelope Isolation Actuation Instrumentation train is adequate to perform the MCR/ESGR envelope isolation function. However, the overall reliability is reduced because a failure in the OPERABLE train could result in loss of MCR/ESGR envelope isolation function. The 7 day Allowed Outage Time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability.

If the train cannot be restored to OPERABLE status, the normal ventilation to the MCR/ESGR envelope must be isolated. This accomplishes the manual MCR/ESGR envelope isolation function and places the unit in a conservative mode of operation. If the Required Action and associated Allowed Outage Time for Action Statement 3.7.F.1.a have not been met and T_{avg} exceeds 200°F, the unit must be brought to a REACTOR OPERATION condition in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to at least HOT SHUTDOWN within 6 hours and COLD SHUTDOWN within the following 30 hours. The completion times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

3.7.F.1.b

This TS requirement applies to the failure of two manual MCR/ESGR Envelope Isolation Actuation Instrumentation trains.

The Required Action is to isolate the normal ventilation to the MCR/ESGR envelope immediately. This accomplishes the manual MCR/ESGR envelope isolation function that may have been lost and places the unit in a conservative mode of operation. If the

Required Action and associated Allowed Outage Time for Action Statement 3.7.F.1.b have not been met and T_{avg} exceeds 200°F, the unit must be brought to a REACTOR OPERATION condition in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to at least HOT SHUTDOWN within 6 hours and COLD SHUTDOWN within the following 30 hours. The completion times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

3.7.F.2.a

This TS requirement applies to the failure of one manual MCR/ESGR Envelope Isolation Actuation Instrumentation train when irradiated fuel assemblies are being moved. Either the normal ventilation to MCR/ESGR envelope must be isolated or movement of irradiated fuel assemblies must be suspended within 7 days to reduce the risk of accidents that would require manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation.

3.7.F.2.b

This TS requirement applies to the failure of two manual MCR/ESGR Envelope Isolation Actuation Instrumentation trains when irradiated fuel assemblies are being moved. Either the normal ventilation to MCR/ESGR envelope must be isolated or movement of irradiated fuel assemblies must be suspended immediately to reduce the risk of accidents that would require manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation.

References

- (1) UFSAR - Section 7.5
- (2) UFSAR - Section 14.5
- (3) UFSAR - Section 14.3.2
- (4) UFSAR - Section 9.13
- (5) UFSAR - Section 14.4.1

10. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

11. Two Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) trains shall be OPERABLE.
 - a. With one required train inoperable for reasons other than an inoperable MCR/ESGR envelope boundary, restore the inoperable train to OPERABLE status within 7 days. If the inoperable train is not returned to OPERABLE status within 7 days, comply with Specification 3.10.C.
 - b. If two required trains are inoperable or one or more required trains are inoperable due to an inoperable MCR/ESGR envelope boundary, comply with Specification 3.10.C.
12. Manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation shall be OPERABLE as specified in TS 3.7.F.
13. Three chillers shall be OPERABLE in accordance with the power supply requirements of Specification 3.23.C. With one of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, return the inoperable chiller to OPERABLE status within 7 days or comply with Specification 3.10.C. With two of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, comply with Specification 3.10.C.
14. Eight air handling units (AHUs) shall be OPERABLE in accordance with the operability requirements of Specification 3.23.C. With two AHUs inoperable on the shutdown unit, ensure that one AHU is OPERABLE in each unit's main control room and emergency switchgear room, and restore an inoperable AHU to OPERABLE status within 7 days, or comply with Specification 3.10.C. With more than two AHUs inoperable, comply with Specification 3.10.C.

B. During irradiated fuel movement in the Fuel Building the following conditions are satisfied:

1. The fuel pit bridge area monitor and the ventilation vent stack 2 particulate and gas monitors shall be OPERABLE and continuously monitored to identify the occurrence of a fuel handling accident.
2. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

3. A spent fuel cask shall not be moved into the Fuel Building unless the Cask Impact Pads are in place on the bottom of the spent fuel pool.
4. Two MCR/ESGR EVS trains shall be OPERABLE.
 - a. With one required train inoperable for reasons other than an inoperable MCR/ESGR envelope boundary, restore the inoperable train to OPERABLE status within 7 days. If the inoperable train is not returned to OPERABLE status within 7 days, comply with Specification 3.10.C.
 - b. If two required trains are inoperable or one or more required trains are inoperable due to an inoperable MCR/ESGR envelope boundary, comply with Specification 3.10.C.
5. Manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation shall be OPERABLE as specified in TS 3.7.F.
6. Three chillers shall be OPERABLE in accordance with the power supply requirements of Specification 3.23.C. With one of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, return the inoperable chiller to OPERABLE status within 7 days or comply with Specification 3.10.C. With two of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, comply with Specification 3.10.C.

The requirements in this specification for the Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) and the MCR and ESGR Air Conditioning System (chillers and air handling units) apply to the shutdown unit. If any of the specified limiting conditions is not met, the requirements appropriately suspend activities that could result in a release of radioactivity that might require isolation of the MCR/ESGR envelope and place irradiated fuel in a safe position without delay and in a controlled manner. The requirements applicable to the operating unit are contained in Specifications 3.21 and 3.23.

During REFUELING OPERATIONS and during the movement of irradiated fuel assemblies, the MCR/ESGR EVS and the manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation must be OPERABLE to ensure that the MCR/ESGR envelope will remain habitable during and following a Design Basis Accident.

Specifically, during REFUELING OPERATIONS and during movement of irradiated fuel assemblies, the MCR/ESGR EVS and the manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation must be OPERABLE to respond to the release from a fuel handling accident.

3.10.A.7 and 8

During refueling, the reactor refueling water cavity is filled with approximately 220,000 gal of water borated to at least 2,300 ppm boron. The boron concentration of this water, established by Specification 3.10.A.7, is sufficient to maintain the reactor subcritical by at least 5% $\Delta k/k$ in the COLD SHUTDOWN condition with all control rod assemblies inserted. This includes a 1% $\Delta k/k$ and a 50 ppm boron concentration allowance for uncertainty. This concentration is also sufficient to maintain the core subcritical with no control rod assemblies inserted into the reactor. Checks are performed during the reload design and safety analysis process to ensure the K-effective is equal to or less than 0.95 for each core. Periodic checks of refueling water boron concentration assure the proper shutdown margin. Specification 3.10.A.8 allows the Control Room Operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

3.10.A.11 and 12 and 3.10.B.4 and 5

When one MCR/ESGR EVS train is inoperable, for reasons other than an inoperable MCR/ESGR envelope boundary, action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining required OPERABLE MCR/ESGR EVS train is adequate to perform the MCR/ESGR envelope occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE MCR/ESGR EVS train could result in loss of MCR/ESGR EVS function. The 7 day Allowed Outage Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

During REFUELING OPERATIONS or during movement of irradiated fuel assemblies, if the required inoperable MCR/ESGR EVS train cannot be restored to OPERABLE status within the required Allowed Outage Time, or two required MCR/ESGR EVS trains are inoperable or with one or more required MCR/ESGR EVS trains inoperable due to an inoperable MCR/ESGR envelope boundary, action must be taken to suspend activities that could result in a release of radioactivity that might require isolation of the MCR/ESGR envelope. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

In addition to the above safeguards, interlocks are used during refueling to assure safe handling of the fuel assemblies. An excess weight interlock is provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. The spent fuel transfer mechanism can accommodate only one fuel assembly at a time.

Upon each completion of core loading and installation of the reactor vessel head, specific mechanical and electrical tests will be performed prior to initial criticality.

The fuel handling accident has been analyzed based on the methodology outlined in Regulatory Guide 1.183. The analysis assumes 100% release of the gap activity from the assembly with maximum gap activity after a 100-hour decay period following operation at 2605 MWt.

Detailed procedures and checks insure that fuel assemblies are loaded in the proper locations in the core. As an additional check, the movable incore detector system will be used to verify proper power distribution. This system is capable of revealing any assembly enrichment error or loading error which could cause power shapes to be peaked in excess of design value.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 266 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-32

AND

AMENDMENT NO. 265 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-280 AND 50-281

1.0 INTRODUCTION

By letter dated October 9, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082890529), as supplemented by letters dated November 17, 2008 (ADAMS Accession No. ML083220479), and December 10, 2008 (ADAMS Accession No. ML083460212), Virginia Electric and Power Company (the licensee) submitted a request for changes to the Surry Power Station, Unit Nos. 1 and 2 (Surry Units 1 and 2), Technical Specifications (TSs). The requested changes would:

- 1) Delete TS 3.19, "Main Control Room Bottled Air System."
- 2) Add new TS 3.7F, "MCR/ESGR [Main Control Room/Emergency Switchgear Room] Envelope Isolation Actuation Instrumentation," to provide operability requirements for the manual initiation of the MCR/ESGR envelope isolation actuation instrumentation.
- 3) Replace existing TS 3.10.A.12 and TS 3.10. B.5, which include operability requirements for the MCR bottled air system during refueling operations and irradiated fuel movement, respectively, with TS operability requirements for manual actuation of the MCR/ESGR envelope isolation actuation instrumentation during these conditions.
- 4) Replace existing Item 15, "Control Room Bottled Air Test," of TS Table 4.1-2A, "Minimum Frequency for Equipment Tests," with new item 15, "MCR/ESGR Envelope Isolation Actuation Instrumentation – Manual," surveillance requirements.
- 5) Revise TS 6.4.R, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program," to delete reference to the MCR bottled air system and the emergency habitability system (EHS).

6) Delete Specification 3.19, "Main Control Room Bottled Air System," from the TS Table of Contents.

The supplements dated November 17, 2008, and December 10, 2008, provided additional information that clarified the application, did not expand the scope of the original application as originally noticed, and did not change the staff's initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

Conformance with General Design Criteria (GDC):

Surry Units 1 and 2 were designed prior to the draft GDC issued in 1967. Construction permits for Surry units 1 and 2 were issued on June 25, 1968. Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix A with mandatory GDC became effective on March 21, 1971. The Safety Evaluation Report for the Surry Units 1 and 2 operating licenses was issued in February 1972. The Surry Units 1 and 2 were not subject to the GDC requirements (reference SECY-92-223, September 18, 1992, ADAMS Accession No. ML003763736), but were designed to meet the intent of the draft GDC. The amendment request identified the following applicable GDC and described specific conformance with each one:

Criterion 1	Quality Standards and Records
Criterion 2	Protection Against Natural Phenomena
Criterion 3	Fire Protection
Criterion 4	Environmental and Missile Design Bases
Criterion 5	Sharing of Structures, Systems and Components
Criterion 13	Instrumentation and Control
Criterion 19	Control Room

Compliance With 10 CFR 50.36(c)(2)(ii):

Section 50.36 contains the requirements for the content of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits (SLs), limiting safety system settings (LSSSs), and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls.

Section 50.36(c)(2)(ii) lists the criteria used to determine whether or not LCOs must be established in the TSs for items related to plant operation. If the item falls into one of the four categories below, an LCO must be established in the TSs to ensure the lowest functional capability or performance level of equipment required for safe operation of the facility will be met. The four criteria are:

- 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.
- Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design-basis accident (DBA) or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

- Criterion 3: A structure, system 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.
- Criterion 4: An SSC which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

In 10 CFR 50.36(c)(3), the NRC states, "Surveillance requirements 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 limiting conditions for operation will be met."

Conformance with Regulatory Guide 1.183:

Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design-basis Accidents at Nuclear Power Reactors," Revision 0, July 2000 (ADAMS Accession No. ML003716792) provides the following pertinent Regulatory Positions:

- Regulatory Position C.1.1.1, "Safety Margins"

The proposed uses of an alternate source term (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, "Defense in Depth"

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 General Design Criteria in Appendix A to 10 CFR Part 50 is essential. Modifications proposed for the facility generally should not create a need for compensatory programmatic activities, such as reliance on manual operator actions.

Proposed modifications that seek to downgrade or remove required engineered safeguards equipment should be evaluated to be sure that the modification does not invalidate assumptions made in facility probabilistic risk assessments (PRAs) and do not adversely impact the facility's severe accident management program.

Conformance with NUREG-0800, "Standard Review Plan (SRP)," Revision 3 – March 2007, Section 6.4.III.2, "Control Room Personnel Capacity"

Control Room Personnel Capacity: A control room designed with complete isolation capability from the outside air to provide radiation and toxic gas protection is reviewed to determine if the buildup of carbon dioxide could present a problem. The air inside a 2830 m³ (100,000 cubic

foot) control room would support five persons for at least 6 days. Thus, CO₂ buildup in an isolated emergency zone is not normally considered a limiting problem.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes

The NRC Staff reviewed the proposed TS changes and verified that they are adequately justified on the basis of plant-specific design. The Nuclear Regulatory Commission (NRC) staff also reviewed the proposed changes to the TS Bases for consistency with the proposed TS changes and plant-specific design and licensing bases. TS Bases changes are made pursuant to a licensee controlled program and do not bear on the acceptability of the proposed amendment.

3.1.1 Deletion of TS 3.19, "Main Control Room Bottled Air System"

The Surry Units 1 and 2 MCR/ESGR envelope consists of a common MCR and two separate ESGRs located directly beneath the MCR. The MCR bottled air system consists of two banks of air bottles (breathing quality compressed air cylinders) with associated piping, instrumentation, and controls. Each bank is designed to provide 18,000 cubic feet of free air for pressurizing the MCR/ESGR envelope for at least one (1) hour following any event with the potential for radioactive releases. During normal operations, the MCR bottled air system is maintained in standby. A safety injection signal or a manual actuation signal initiates both the MCR bottled air system and isolation of the MCR/ESGR envelope. Sixty minutes or more after the accident initiation but before depletion of the bottled air supply, control room operators manually activate the control room emergency filtered air system (CREFAS) which uses fans drawing from the turbine building to provide filtered fresh air make-up to and pressurization of the MCR/ESGR envelope.

A submittal of design-basis accident (DBA) dose analyses using AST methodology was approved by the NRC on March 8, 2002 in Amendments 230 and 230 for Surry Units 1 and 2, respectively (ADAMS Accession No. ML020710159). These amendments approved implementation of an AST consistent with 10 CFR 50.67, "Accident Source Term." After the AST amendment, the systems continued to operate as described above.

This analysis of record (AOR) for the loss-of-coolant accident (LOCA) and fuel-handling accident (FHA) assumed an MCR/ESGR unfiltered air leakage rate of 500 cubic feet per minute (cfm) with automatic isolation of the MCR/ESGR envelope on safety injection for the LOCA and manual isolation for an FHA. The AOR showed the MCR/ESGR occupant dose to be within the 5 rem total effective dose equivalent (TEDE) criterion specified in 10 CFR 50.67 for the limiting accident LOCA. Subsequently the steam generator tube rupture (SGTR), main steam line break (MSLB), and reactor coolant pump locked rotor accidents (LRA) were also reanalyzed using the AST methodology. The licensee reported in their April 22, 2004 response to Generic Letter (GL) 2003-01, "Control Room Habitability," (ADAMS Accession No. ML041130386), that they performed a tracer gas test for MCR/ESGR unfiltered leakage on January 18, 2004, with the MCR/ESGR envelope in a non-pressurized condition. The total unfiltered leakage was determined to be 147 cubic feet per minute (cfm), which was well within the 500 cfm assumed in the AST dose analysis. The licensee also requested, and by NRC letter dated July 7, 2008 (ADAMS Accession No. ML081750690) was issued, license amendments 260 and 260, Surry

Units 1 and 2 respectively, for adding TS requirements for periodic tracer gas testing and implementing an MCR/ESGR envelope habitability program to ensure the AOR unfiltered inleakage assumptions remain valid.

Section 50.36(c)(2)(ii) contains four criteria for determining if requirements for items must be included in the TS. In the amendment request the licensee justified the proposed deletion of TS 3.19, stating that it does not meet any of the four criteria:

- Criterion 1 is not met since TS 3.19 does not address 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 3.19 does not address 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. This TS ensures the operability of the MCR bottled air system which is not credited in the plant accident analyses.
- Criterion 3 is not met because pressurization of the MCR/ESGR is no longer presumed necessary to limit the dose to the MCR/ESGR occupants within required limits and thus does not address a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient.
- Criterion 4 is not met because the MCR/ESGR Bottled Air System was screened out of the Surry Units 1 and 2 PRA model due to its low risk significance.

Based upon the above, the licensee concluded that the proposed deletion of TS 3.19 does not impact plant equipment, which is credited to function in the event of a DBA. Similarly, the licensee concluded that the requirements contained in this current TS do not meet any of the four 10 CFR 50.36(c)(2)(ii) criteria regarding items for which TSs must be established. Therefore, the licensee concluded that the proposed deletion of TS 3.19 is consistent with the Commission's regulations.

The NRC staff reviewed the licensee's justification and agrees with the licensee that the proposed deletion of TS 3.19 does not impact plant equipment which is credited to function in the event of a DBA. Also, the requirements contained in this current TS do not meet any of the four 10 CFR 50.36(c)(2)(ii) criteria regarding items for which TSs must be established. With the AOR using AST methodology showing that adequate radiation protection continues to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem TEDE, for the duration of the accident, GDC 19 continues to be met. Therefore, the NRC staff agrees that the proposed change to delete TS 3.19 is consistent with the Commission's regulations and is therefore acceptable.

By letter dated November 17, 2008, and as supplemented by a letter dated December 10, 2008, the licensee assessed the MCR/ESGR envelope for oxygen (O₂) and carbon dioxide (CO₂) concentrations at one hour following the onset of a DBA (MCR/ESGR envelope isolated with no fresh air supplied) assuming 20 occupants inside MCR/ESGR envelope. The licensee confirmed that environmental conditions at one hour conforms with the guidelines for air quality of the 2005 American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), "Handbook – Fundamentals", and the American Conference of Governmental Industrial Hygienist,

"Industrial Ventilation, A Manual of Recommended Practice", 22nd Edition, 1995. The licensee therefore concluded that breathing air for the MCR/ESGR envelope occupants, during the first hour of a DBA would be adequate.

The NRC staff reviewed the licensee's assessment concerning the quality of 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 agrees with the licensee that the removal of the requirement for a bottled air system will not degrade the abilities of the MCR occupants. Therefore, the NRC staff also concludes that Surry Units 1 and 2 continue to conform with the guidelines of Section 6.4.III.2, "Control Room Personnel Capacity," of NUREG-0800, "Standard Review Plan (SRP)," Revision 3, March 2007.

By letter dated October 9, 2008, the licensee provided the following evaluation for their determination that the proposed changes conform to Regulatory Position C.1.1.1, "Safety Margins," of RG 1.183 guidance that in using an AST, sufficient safety margins are maintained:

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 subatmospheric pressure within one hour. The MCR bottled air system was designed to operate during the one hour period that the containment was above atmospheric pressure and prevent unfiltered inleakage into the control room. After implementation of the AST and as a result of addressing GSI-191, *Assessment of Debris Accumulation on PWR Sump Performance*, it can now take up to 4 hours for the containment to return to subatmospheric pressure following a LOCA. Additionally, in the AST LOCA analysis the majority of the core release to the containment atmosphere occurs between 0.5 and 1.8 hours.

Operation of the MCR Bottled Air System and MCR/ESGR envelope inleakage was previously accounted for in the Surry [Units 1 and 2] safety analysis by assuming a MCR/ESGR inleakage of 10 cfm (for door openings). This was based on maintaining pressure in the control room at 0.05 inches of water. At no time was the MCR Bottled Air System flow rate or pressure explicitly credited in the safety analysis. The 10 cfm inleakage was an assumption in the analysis not a measured value. Surry [Units 1 and 2] now measures MCR/ESGR envelope inleakage in accordance with TS 4.18, *Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) Testing*, and TS 6.4.R, *Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program*, with an acceptance criterion of 500 cfm for LOCAs and FHAs in a non-pressurized alignment. The inleakage acceptance criterion is based on the NRC approved AST analysis, which is consistent with the applicable codes and standards, and provides adequate margin to account for measurement uncertainties associated with the test method required to establish the MCR/ESGR inleakage limit. The last measured tracer gas test result was 147 +/- 6 cfm with the MCR/ESGR envelope in a non-pressurized mode. With the deletion of the MCR Bottled Air System TS requirements, the safety analysis and the TS will be consistent. Therefore, deletion of MCR Bottled Air System TS requirements does not adversely affect the margin of safety. The existing plant design and operation provide sufficient safety margin to ensure the operator's dose will not exceed the approved safety analysis, or any NRC dose limit.

Consequently, the proposed deletion of the MCR Bottled Air System TS requirements is consistent with the principle that sufficient safety margin, including margin to account for analysis uncertainties, is maintained.

The NRC staff reviewed the licensee's determination regarding conformance with Regulatory Position C.1.1.1, "Safety Margins," of RG 1.183, and finds it acceptable because the proposed TS changes are consistent with the equipment operability assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67 and the results of the non-pressurized MCR/ESGR envelope tracer gas testing and for the ongoing monitoring of envelope integrity required by TS 6.4.R, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program." Therefore, the NRC staff concludes that the proposed removal of TS 3.19 is consistent with Regulatory Position C.1.1.1 of RG 1.183.

By letter dated October 9, 2008, the licensee provided the following evaluation for their determination that the proposed changes conform to Regulatory Position C.1.1.2, "Defense in Depth," of RG 1.183 guidance that in using an AST, adequate defense-in-depth is maintained to compensate for uncertainties in accident progression and analysis data:

Elimination of the MCR bottled air system TS requirements does not increase the likelihood of any accident, nor create the probability of any new accident. Dose mitigation capability is maintained because the MCR/ESGR envelope, the MCR/ESGR Envelope Isolation Actuation Instrumentation and the MCR/ESGR EVS are required to be OPERABLE. Operability of these systems will continue to ensure that operator dose remains within the safety analysis limits.

The MCR/ESGR envelope, the MCR/ESGR Envelope Isolation Actuation Instrumentation and the MCR/ESGR EVS [emergency ventilation system] design will continue to provide adequate mitigation of operator dose without reliance on programmatic activities. No additional programmatic activities (manual actions) are necessary as a result of the proposed change. Manual actions are still required to isolate the MCR/ESGR envelope for a FHA and to initiate EVS trains to provide filtered makeup air to the MCR/ESGR envelope.

The TS limit the outages of redundant trains of safety-related equipment and Surry [Units 1 and 2] Maintenance Rule (a)(4) program ensures that simultaneous equipment outages are controlled such that the principles of redundancy and diversity are not eroded.

No new common cause failure vulnerabilities were identified in the deletion of the MCR Bottled Air System TS requirements. The remaining mitigation systems will continue to be operated in the same manner without the introduction of any new common cause failure mechanisms.

No physical barriers will be degraded by the proposed TS change. The MCR/ESGR envelope and the MCR/ESGR EVS are not degraded by the proposed change. MCR/ESGR operation with inleakage below the analyzed limit will ensure that operator dose remains below the acceptance criteria.

No new potential human errors are expected. [The AST core inventory release timing, the significantly increased inleakage acceptance criteria and the extended period of containment pressurization have removed any MCR Bottled Air System benefit. Therefore,

the MCR bottled air system does not add to defense in depth, since its one hour of operation is too short to effectively mitigate design-basis radiological accidents. Consequently, the proposed deletion of the MCR Bottled Air System TS requirements does not invalidate assumptions made in the Surry Units 1 and 2 PRA and does not adversely impact the facility's severe accident management program. The proposed TS change only eliminates the need for the MCR Bottled Air System.] The MCR/ESGR Envelope Isolation Actuation Instrumentation and the MCR/ESGR EVS will ensure that the operators are adequately protected. There are no additional automatic or manual actions required as a result of this proposed change.

The intent of the General Design Criteria (GDC) is satisfied by the proposed TS change. The remaining mitigation systems (i.e., MCR/ESGR envelope, MCR/ESGR Envelope Isolation Actuation Instrumentation and MCR/ESGR EVS) continue to meet the intent of the GDC.

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 being no longer necessary to provide adequate defense-in-depth to maintain MCR/ESGR envelope habitability during a DBA. Therefore, the proposed changes, including deletion of TS 3.19, will revise the TS equipment operability requirements consistent with assumptions of the current dose AOR, performed in accordance with 10 CFR 50.67.

3.1.2 Add New TS 3.7F and Revise TS Table 4.1-2A Item 15

In the license amendment request, the licensee provided the justification for their proposed changes to the following sections. A new TS 3.7F, "MCR/ESGR Envelope Isolation Actuation Instrumentation", is to be added to provide operability requirements for the manual initiation of the MCR/ESGR envelope isolation actuation instrumentation. Automatic actuation of the MCR/ESGR envelope isolation actuation instrumentation is already addressed as part of the safety injection instrument operating conditions included in TS Table 3.7-2, "Engineered Safeguards Action Instrument Operating Conditions." Operability of the manual actuation switches used for isolation of the MCR/ESGR envelope in the event of an FHA was previously assured by the MCR bottled air system, TS 3.19, and the associated surveillance requirements included in TS Table 4.1-2A, Item 15. Since the MCR bottled air system requirements are being removed from the TSs, the operability and surveillance requirements for the manual actuation switches used to isolate the MCR/ESGR envelope in the event of an FHA are being incorporated into TS 3.7, "*Instrumentation Systems*," and 4.1, "*Operational Safety Review*," respectively.

The NRC staff evaluated the statements and data in TS 3.7.F and finds that they conform with similar statements and data in current TS 3.19. The staff also finds that the Surry Units 1 and 2 TS 3.7.F conforms to TS 3.3.7, "Control Room Emergency Filtration System (CREFS) Actuation Instrumentation," in NUREG-1431, "Standard Technical Specifications Westinghouse Plants, Revision 3."

The NRC staff also finds that the proposed TS 3.7.F conforms with TS 3.3.7, "Control Room Emergency Ventilation System (CREVS) Actuation Instrumentation," for Beaver Valley Power Station, Units 1 and 2. By letter dated September 10, 2003 ADAMS Accession No. ML032530204, the NRC approved elimination of the TS requirements for the control room

emergency bottled air pressurization system for the Beaver Valley TSs and this LAR is applicable to this change.

Based on these evaluations, the staff finds that the addition of TS 3.7.F conforms to the regulatory requirements specified in Section 2.0 of this SE and is therefore acceptable.

The proposed changes for Item 15 to TS Table 4.1-2A, also, are related to the deletion of TS 3.19 and the addition of TS 3.7.F. The current Table 4.1-2A refers to Final Safety Analysis Report (FSAR), Section 9.13, which is for the auxiliary ventilation system and specifies 18 months of test frequency for positive differential pressure capability, pressure control valve(s) functionality, manual action capability, and automatic actuation capability of Item 15, MCR bottled air system. The NRC staff finds FSAR Section 9.13 applicable for the MCR/ESGR system. The licensee stated in the proposed basis for TS 4.1 that the proposed test frequency is based on the known reliability of the function and the redundancy available and has been shown to be acceptable through operating experience. Based on these evaluations, the NRC staff finds the proposed changes to TS Table 4.1-2A acceptable.

The NRC staff reviewed the licensee's justification for the TS 3.7F and the revised TS Table 4.12A, Item 15 related changes and found them to be consistent with the removal of requirements for the MCR bottled air system from the TSs and therefore acceptable.

3.1.3 Revise TS 3.10.A.12 and TS 3.10.B.5

The licensee proposed the following changes to TS 3.10, "Refueling." [Replace existing TS 3.10.A.12 and TS 3.10.B.5, which include operability requirements for the MCR Bottled Air System during refueling operations and irradiated fuel movement, respectively, with TS operability requirements for manual actuation of the MCR/ESGR Envelope Isolation Actuation Instrumentation during these conditions.]

The NRC staff reviewed these proposed changes to TS 3.10 and found them consistent with the removal of TS requirements for the MCR bottled air system and retention of the capability for manual initiation the MCR/ESGR envelope isolation and therefore acceptable. The proposed changes to TS 3.10.A.12 and TS 3.10.B.5 are related to the deletion of TS 3.19 and the addition of TS 3.7.F and are administrative in nature and therefore acceptable.

3.1.4 Revise TS 6.4.R

The licensee proposed to revise TS 6.4.R, "Main Control Room/Emergency Switchgear Room (MCR/ESGR) Envelope Habitability Program," to delete reference to the MCR bottled air system and the EHS. The EHS is currently defined as including both the MCR/ESGR EVS and the MCR bottled air system. The licenses concluded that removing the MCR bottled air system from the TSs also makes reference to an EHS unnecessary.

The NRC staff reviewed these proposed changes to TS 6.4.R and found them consistent with the removal of the TS requirements for the MCR bottled air system and therefore acceptable.

3.1.5 Editorial Changes

The licensee also proposed revisions to the Technical Specifications' Table of Contents and the Technical Specifications' Bases.

The NRC staff reviewed these proposed changes for consistency with the plant-specific design and licensing bases and the requested changes evaluated in the preceding paragraphs. These changes improve the usability and quality of the presentation of the TSs, have no impact on safety, and therefore are acceptable.

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 76415). 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 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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Date: October 29, 2009

D. Heacock

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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/

Karen Cotton , Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

Enclosures:

1. Amendment No. 266 to DPR-32
2. Amendment No. 265 to DPR-37
3. Safety Evaluation

cc w/encls: Distribution via Listserv

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DATE	4/8/09	10/28/09	10/20/09	10/29/09

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