

September 1, 1993

Docket Nos. 50-280  
and 50-281

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

Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: THE MAIN CONTROL ROOM AND EMERGENCY SWITCHGEAR ROOM CHILLERS (TAC NOS. M86108 AND M86109)

The Commission has issued the enclosed Amendment No. 182 to Facility Operating License No. DPR-32 and Amendment No. 182 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated March 15, 1993, as supplemented April 21, 1993; the supplemental letter supplied clarifying information that did not change the initial proposed no significant hazards consideration determination.

These amendments eliminate the specific main control room and the emergency switchgear room air conditioning chiller identification from the TS and specify a time limit to restore one of two inoperable chillers to operable status, when two of the three chillers become inoperable. In addition, system names and TS-defined words are being capitalized, and acronyms are being spelled out for consistency.

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

Sincerely,  
(Original Signed By)  
Bart C. Buckley, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 182 to DPR-32
2. Amendment No. 182 to DPR-37
3. Safety Evaluation

cc w/enclosures: See next page

LA:PDII-2  
ETana *ETT*  
7/22/93  
SPLB  
CMcCracken  
7/27/93

*BCB*  
PM:PDII-2  
BBuckley  
7/22/93

*HB*  
D:PDII-2  
HBerkow  
7/22/93

*CG*  
OTSB  
CGrimes  
8/16/93  
CWM 893-124

*RB*  
ORC  
R Bachmann  
8/12/93

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

Surry Power Station

cc:

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Board of Supervisors of Surry County  
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State Health Commissioner  
Office of the Commissioner  
Virginia Department of Health  
P.O. Box 2448  
Richmond, Virginia 23218

DATED: September 1, 1993

AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1  
AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

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

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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 FACILITY OPERATING LICENSE

Amendment No. 182  
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 March 15, 1993, as supplemented April 21, 1993, 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.

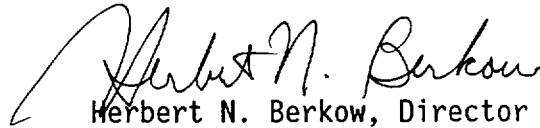
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 182, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 1, 1993



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 FACILITY OPERATING LICENSE

Amendment No. 182  
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 March 15, 1993, as supplemented April 21, 1993, 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.

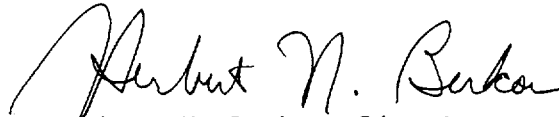
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 182, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 1, 1993

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

TS 3.16-5  
TS 3.23-1  
TS 3.23-2  
TS 3.23-3  
TS 3.23-4

Insert Pages

TS 3.16-5  
TS 3.23-1  
TS 3.23-2  
TS 3.23-3  
TS 3.23-4



The diesel generators function as an on-site back-up system to supply the emergency buses. Each emergency bus provides power to the following operating Engineered Safeguards equipment:

- A. One containment spray pump
- B. One charging pump
- C. One low head safety injection pump
- D. One recirculation spray pump inside containment
- E. One recirculation spray pump outside containment
- F. One containment vacuum pump
- G. One motor-driven auxiliary steam generator feedwater pump
- H. One motor control center for valves, instruments, control air compressor, fuel oil pumps, etc.
- I. Control area air conditioning equipment - four air recirculating units, two water chilling units, one service water pump and two chilled water circulating pumps
- J. One charging pump service water pump for charging pump intermediate seal coolers and lube oil coolers
- K. One charging pump cooling water pump for charging pump seal coolers.

**3.23 MAIN CONTROL ROOM AND EMERGENCY SWITCHGEAR ROOM VENTILATION AND AIR CONDITIONING SYSTEMS****Applicability**

Applies to the Main Control Room (MCR) and Emergency Switchgear Room (ESGR) Air Conditioning System and Emergency Ventilation System.

**Objective**

To specify requirements to ensure the proper function of the Main Control Room and Emergency Switchgear Room Air Conditioning System and Emergency Ventilation System.

**Specification**

- A. Both trains of the Main Control Room and Emergency Switchgear Room Emergency Ventilation System shall be OPERABLE whenever either unit is above COLD SHUTDOWN.
- B. With one train of the Main Control Room and Emergency Switchgear Room Emergency Ventilation System inoperable for any reason, return the inoperable train to an OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 48 hours.
- C. The Main Control Room and Emergency Switchgear Room Air Conditioning System shall be OPERABLE as delineated in the following:
  - \*1. Chiller Refrigeration Units
    - a. Three main control room and emergency switchgear room chillers must be OPERABLE whenever either unit is above COLD SHUTDOWN.

\* This interim specification is necessary until the air conditioning system modifications are completed. Following completion of the permanent modifications, a revised air conditioning system specification will be submitted.

- b. The three OPERABLE chillers are required to be powered from three of the four emergency buses with one of those chillers capable of being powered from the fourth emergency bus.
- c. If one of the OPERABLE chillers becomes inoperable or is not powered as required by Specification 3.23.C.1.b, return an inoperable chiller to OPERABLE status within seven (7) days or bring both units to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.
- d. If two of the OPERABLE chillers become inoperable or are not powered as required by Specification 3.23.C.1.b, return an inoperable chiller to OPERABLE status within one (1) hour or bring both units to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

## 2. Air Handling Units (AHU)

- a. Unit 1 air handling units, 1-VS-AC-1, 1-VS-AC-2, 1-VS-AC-6, and 1-VS-AC-7, must be OPERABLE whenever Unit 1 is above COLD SHUTDOWN.
  - 1. If one Unit 1 AHU becomes inoperable, return the inoperable AHU to OPERABLE status within seven (7) days or bring Unit 1 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.
- b. Unit 2 air handling units, 2-VS-AC-8, 2-VS-AC-9, 2-VS-AC-6, and 2-VS-AC-7 must be OPERABLE whenever Unit 2 is above COLD SHUTDOWN.
  - 1. If one Unit 2 AHU becomes inoperable, return the inoperable AHU to OPERABLE status within seven (7) days or bring Unit 2 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

**Basis**

When the supply of compressed bottled air is depleted, the Main Control Room and Emergency Switchgear Room Emergency Ventilation System is manually started to continue to maintain the control room pressure at the design positive pressure so that leakage is outleakage. One train of the main control room emergency ventilation consists of one fan powered from an independent emergency power source.

The Main Control Room and Emergency Switchgear Room Emergency Ventilation System is designed to filter the intake air to the control room pressure envelope, which consists of the control room, relay rooms, and emergency switchgear rooms during a loss of coolant accident.

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential intake of radio-iodine to the control room. The in-place test results should indicate a system leaktightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99.5 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 95 percent for expected accident conditions. The control room dose calculations assume only 90 percent iodine removal efficiency for the air passing through the charcoal filters. Therefore, if the efficiencies of the HEPA filters and charcoal adsorbers are as specified, at the temperatures, flow rates and velocities within the design values of the system, the resulting doses will be less than the allowable levels stated in Criterion 19 of the General Design Criteria for Nuclear Power Plants, Appendix A to 10 CFR Part 50.

If the system is found to be inoperable, there is no immediate threat to the control room, and reactor operation may continue for a limited period of time while repairs are being made. If the system cannot be repaired within the specified time, procedures are initiated to establish conditions for which the filter system is not required.

The Main Control Room and Emergency Switchgear Room Air Conditioning System cools the main control room, the control room annex and the Units 1 and 2 emergency switchgear rooms. The existing air conditioning system includes three chillers (1-VS-E-4A, 4B, and 4C) and eight air handling units (1-VS-AC-1, 2, 6, 7 and 2-VS-AC-6, 7, 8, and 9).

Interim modifications were completed on the Main Control Room and Emergency Switchgear Room Air Conditioning System to address interim failure and increased cooling requirements for the emergency switchgear rooms. Permanent modifications will include replacement of the main control room and emergency switchgear room air handling units (AHU) and installation of additional chiller capacity to restore original design flexibility.

Units 1 and 2 main control room and emergency switchgear room AHUs have been replaced in the initial phases of the permanent modification, restoring redundancy to the AHU portion of the original system design. As a result, the following main control room and emergency switchgear room equipment is required to operate to maintain design temperature under maximum heat load conditions:

- Two chillers
- One Unit 1 MCR AHU and one Unit 1 ESGR AHU
- One Unit 2 MCR AHU and one Unit 2 ESGR AHU

The existing chiller configuration requires that the three chillers in MER-3 (1-VS-E-4A, 4B, and 4C) be OPERABLE so that in the event of a total Loss of Offsite Power to the station and the single failure of an emergency bus or a chiller, two chillers remain available. Installation of the two additional chillers in MER-5 (1-VS-E-4D and 4E) will provide operational flexibility. Any three of the five installed chillers, powered from separate emergency buses with one of those capable of being powered from the fourth emergency bus, will ensure two chillers are available to maintain design temperature under maximum heat load conditions. This operational flexibility is necessary to complete the permanent modification of the existing chillers.

In addition to the equipment restrictions above, a fire watch will be required during this interim period in MER-3 to address Appendix R considerations.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-32  
AND AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE NO. DPR-37  
VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION, UNITS 1 AND 2  
DOCKET NOS. 50-280 AND 50-281

1.0 INTRODUCTION

By letters dated March 15, 1993 and April 21, 1993, the Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the Surry Power Station, Units 1 and 2. The changes would (1) eliminate specific Main Control Room (MCR) and Emergency Switchgear Room (ESGR) air conditioning chiller identification from the TS, (2) specify a time limit to restore one of two inoperable chillers to operable status, when two of three chillers become inoperable, prior to shutting down both units, and (3) revise the Basis section to delete the fire watch in the ESGRs, discuss the configuration and operation of the MCR and ESGR air conditioning system with the two new safety-related chillers, and reflect the new power scheme of the five control room chillers and associated chilled water pumps. In addition, system names and TS defined words are being capitalized and acronyms are being spelled out for consistency.

2.0 PROPOSED TECHNICAL SPECIFICATION CHANGES

The Basis section of TS 3.16 is being revised to add one additional water chilling unit and one additional chilled water circulating pump to the list of engineered safeguards equipment powered from each emergency bus.

TS 3.23.C.1.a is being revised by replacing the specific reference to chillers 1-VS-E-4A, 4B, and 4C with the more general reference "three Main Control Room and Emergency Switchgear Room chillers".

TS 3.23.C.1.b is being added to require that three operable chillers are to be powered from three of the four emergency buses with one of those chillers capable of being powered from the fourth emergency bus.

TS 3.23.C.1.c (formally TS 3.23.C.1.b) is being revised to include the requirements of the new TS 3.23.C.1.b.

TS 3.23.C.1.d is being added to provide an action statement requiring that if two of the operable chillers become inoperable or not powered as described in the new TS 3.23.C.1.b, an inoperable chiller must be returned to operable status within 1 hour or bring both units to hot shutdown within the next 6 hours and be in cold shutdown within the following 30 hours.

The footnote associated with TS 3.23.C.2.a.1 and TS 3.23.C.2.a.2, which provided for planned entry into these action statements during the MCR and ESGR air conditioning system upgrade project, is being deleted.

The Basis section of TS 3.23 is being revised to add a discussion of the configuration and operation of the MCR and ESGR air conditioning system with the two new safety-related chillers and to delete the requirement of a fire watch in both ESGRs.

In addition, administrative changes are being made to capitalize TS defined words throughout TS section 3.23 and to spell out acronyms and capitalize system names for consistency.

### 3.0 EVALUATION

This TS revision is part of the Surry Power Station initiated MCR and ESGR air conditioning system upgrade program which was started in 1988. To complete the upgrade program, the existing interim operating restrictions must be revised to permit the use of two new safety-related chillers to meet the operability requirements and complete the final plant modifications.

The interim operating restrictions on the Air Handling Units (AHUs) have been removed from the TS. The AHUs have been replaced with larger capacity units which return the air handling capacity of the two trains to 100% capacity each, which was the original plant design requirement. As a result of this work, the need for a fire watch in the ESGRs has been eliminated. Work on the additional chiller capacity is continuing; therefore, the requirements for the interim operating restrictions for the chillers and the mechanical equipment room #3 firewatch are still necessary.

These TS changes will continue to provide 100% air conditioning system capacity to support plant operations. The revised TS will continue to require three operable chillers, powered from three of the four emergency buses with one of the chillers capable of being powered from the fourth emergency bus, whenever either unit is above cold shutdown. This requirement meets the single failure requirements and provides heat removal capacity during both normal and accident conditions.

Operation of the MCR and ESGR air conditioning system following these modifications continues to ensure adequate cooling capacity for normal and accident conditions. Equipment redundancy prevents a total loss of air conditioning during any single failure.

#### 4.0 SUMMARY

The staff has reviewed the licensee's proposed changes to TS Sections 3.16 and 3.23 and finds them to be acceptable.

#### 5.0 STATE CONSULTATION

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

#### 6.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding (58 FR 39060). The staff's proposed finding of no significant hazards consideration is not affected by the April 21, 1993 supplement. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

#### 7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Farnholtz

Date: September 1, 1993