

Mr. J.P. O'Hanlon September 1, 1995  
 Senior Vice President Nuclear  
 Virginia Electric and Power Company  
 5000 Dominion Blvd.  
 Glen Allen, Virginia 23060

**DISTRIB** **UTION:**  
 See next page

**SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: RESIDUAL HEAT REMOVAL LOOP ALLOWED OUTAGE TIME AND ACCUMULATOR ISOLATION/DEPRESSURIZATION (TAC NOS. M92910 AND M92911)**

Dear Mr. O'Hanlon:

The Commission has issued the enclosed Amendment No. 204 to Facility Operating License No. DPR-32 and Amendment No. 204 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 July 14, 1995.

These amendments would provide a two-hour allowed outage time for one residual heat removal loop to accommodate plant safety and emergency power systems surveillance testing and permit depressurizing safety injection accumulators in lieu of accumulator isolation.

This completes our efforts on this issue and we are, therefore, closing out TAC Nos. M92910 and M92911.

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,

*Bart C. Buckley*  
 Bart C. Buckley, Senior Project Manager  
 Project Directorate II-1  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 204 to DPR-32
2. Amendment No. 204 to DPR-37
3. Safety Evaluation

cc w/enclosures:  
 See next page

Document Name - C:\AUTOS\WPDOCS\SU92910.AMD \*Previously Concurred

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Mr. J. P. O'Hanlon  
Virginia Electric and Power Company

Surry Power Station  
Units 1 and 2

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DATED: September 1, 1995

AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1  
AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File

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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. 204  
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 July 14, 1995, 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. 204, 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

*D. E. Trimble for*

David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 1, 1995



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. 204  
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 July 14, 1995, 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. 204, 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

*David E. Trumble for*

David B. Matthews, Director  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 1, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

3.1-2  
3.1-23  
3.1-23a  
3.1-24  
3.1-25

Insert Pages

3.1-2  
3.1-23  
3.1-23a  
3.1-24  
3.1-25

- b. If an unscheduled loss of one or more reactor coolant pumps occurs while operating below 10% RATED POWER (P-7) and results in less than two pumps in service, the affected plant shall be shutdown and the reactor made subcritical by inserting all control banks into the core. The shutdown rods may remain withdrawn.
  
- c. When the average reactor coolant loop temperature is greater than 350°F, the following conditions shall be met:
  - 1. At least two reactor coolant loops shall be OPERABLE.
  - 2. At least one reactor coolant loop shall be in operation.
  
- d. When the average reactor coolant loop temperature is less than or equal to 350°F, the following conditions shall be met:
  - 1. A minimum of two non-isolated loops, consisting of any combination of reactor coolant loops or residual heat removal loops, shall be OPERABLE, except as specified below:
    - (a) One RHR loop may be inoperable for up to 2 hours for surveillance testing provided the other RHR loop is OPERABLE and in operation.
    - (b) During REFUELING OPERATIONS the residual heat removal loop may be removed from operation as specified in TS 3.10.A.6.
  - 2. At least one reactor coolant loop or one residual heat removal loop shall be in operation, except as specified in Specification 3.10.A.6.

G. Reactor Coolant System Overpressure MitigationSpecification

1. The Reactor Coolant System (RCS) overpressure mitigating system shall be OPERABLE as described below:

a. Whenever the RCS average temperature is greater than 350°F, a bubble shall exist in the pressurizer with the necessary sprays and heaters OPERABLE.

b. Prior to decreasing RCS average temperature below 350°F, verify a maximum of one charging pump is capable of injecting into the RCS and that each accumulator is isolated. Thereafter, once per 12 hours:

(1) Verify that a maximum of one charging pump is capable of injecting into the RCS.

(2) Verify that each accumulator is isolated, if isolation is required.

c. Whenever the RCS average temperature is less than or equal to 350°F and the reactor vessel head is bolted:

(1) A maximum of one charging pump shall be OPERABLE and capable of injecting into the RCS. Two charging pumps may be in operation momentarily during transfer of operation from one charging pump to another.

and

(2) The accumulators shall be isolated (accumulator discharge valves closed and their respective breakers locked, sealed or otherwise secured in the open position). Isolation is not required if the accumulator pressure is less than the pressurizer PORV setpoint specified in TS 3.1.G.1.c.(4).

and

- (3) During the initial 72 hours, maintain a bubble in the pressurizer with a maximum narrow range level of 33%,  
or
  - (4) Maintain two Power Operated Relief Valves (PORV) OPERABLE with a lift setting of  $\leq 385$  psig and verify each PORV block valve is open at least once per 72 hours,  
or
  - (5) The RCS shall be vented through one open PORV or an equivalent size opening as specified below:
    - (a) with the RCS vented through an unlocked open vent path, verify the path is open at least once per 12 hours, or
    - (b) with the RCS vented through a locked open vent path verify the path is open at least once per 31 days.
2. The requirements of Specification 3.1.G.1.c.(4) may be modified as follows:
- a One PORV may be inoperable in INTERMEDIATE SHUTDOWN with the RCS average temperature  $> 200^{\circ}\text{F}$  but  $< 350^{\circ}\text{F}$  for a period not to exceed 7 days. If the inoperable PORV is not restored to OPERABLE status within 7 days, then completely depressurize the RCS and vent through one open PORV or an equivalent size opening within the next 8 hours.
  - b One PORV may be inoperable in COLD SHUTDOWN or REFUELING SHUTDOWN with the reactor vessel head bolted for a period not to exceed 24 hours. If the inoperable PORV is not restored to OPERABLE status within 24 hours then completely depressurize the RCS and vent through one open PORV or an equivalent size opening within 8 hours.

- c. With both PORV's inoperable, depressurize the RCS within 8 hours unless Specification 3.1.G.1.c.(3) is in effect. When the RCS has been depressurized, vent the RCS through one open PORV or an equivalent sized opening, or establish the conditions listed below. Maintain the RCS depressurized until both PORV's have been restored to OPERABLE status.
- (1) A maximum pressurizer narrow range level of 33%.
  - (2) The series RHR inlet valves open and their respective breakers locked open or an alternate letdown path OPERABLE.
  - (3) A maximum of one charging pump is capable of injecting into the RCS.
  - (4) Safety Injection accumulator discharge valves closed and their respective breakers locked, sealed, or otherwise secured in the open position.
- d. When the conditions noted in 3.1.G.2.c.(1) through 3.1.G.2.c.(4) above are required to be established, verify the required conditions are met at least once per 12 hours.
3. In the event that the Reactor Coolant System Overpressure Mitigating System is used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.6 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the mitigating system or the administrative controls on the transient and any corrective actions necessary to prevent recurrence.

#### Basis

The operability of two PORV's or the RCS vented through an opened PORV ensures that the Reactor Vessel will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when the Reactor Coolant System average temperature is  $\leq 350^{\circ}\text{F}$  and the Reactor Vessel Head is bolted. When the Reactor Coolant System average temperature is  $> 350^{\circ}\text{F}$ , overpressure protection is provided

by a bubble in the pressurizer and/or pressurizer safety valves. A single PORV has adequate relieving capability to protect the Reactor Vessel from overpressurization when the transient is limited to either (1) the start of an idle Reactor Coolant Pump with the secondary water temperature of a steam generator  $\leq 50^{\circ}\text{F}$  above the RCS cold leg temperature or (2) the start of a charging pump and its injection into a water solid RCS.

The limitation for a maximum of one charging pump allowed OPERABLE and the surveillance required to verify that two charging pumps are inoperable below  $350^{\circ}\text{F}$  provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV, or equivalent. The Safety Injection accumulators are not considered a credible mass input mechanism for RCS low temperature overpressurization concerns. There are administrative controls to ensure isolation, including de-energizing the Safety Injection (SI) accumulator isolation valves, during plant shutdown conditions (RCS pressure less than 1000 psig) to prevent inadvertent SI accumulator discharge into the RCS for low temperature overpressurization concerns. An undesired pressurizer PORV lift due to inadvertent SI accumulator discharge is not possible when SI accumulator pressure is less than the low temperature PORV lift setpoint specified in TS 3.1.G. Therefore, SI accumulator isolation, and verification of such isolation is not necessary when SI accumulator pressure is less than the low temperature PORV setpoint.

A maximum pressurizer narrow range level of 33% has been selected to provide sufficient time, approximately 10 minutes, for operator response in case of a malfunction resulting in maximum charging flow from one charging pump (530 gpm). Operator action would be initiated by at least two alarms that would occur between the normal operating level and the maximum allowable level (33%). When both PORVs are inoperable and it is impossible to manually open at least one PORV, additional administrative controls shall be implemented to prevent a pressure transient that would exceed the limits of Appendix G to 10 CFR Part 50.

The requirements of this specification are only applicable when the Reactor Vessel head is bolted. When the Reactor Vessel head is unbolted, a RCS pressure of  $< 100$  psig will lift the head, thereby creating a relieving capability equivalent to at least one PORV.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 204 TO FACILITY OPERATING LICENSE NO. DPR-32  
AND AMENDMENT NO. 204 TO 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 July 14, 1995, the Virginia Electric and Power Company (the licensee) submitted a request for changes to Surry Power Station Units 1 and 2 Technical Specifications (TS). The requested changes would provide a 2-hour allowed outage time (AOT) in TS 3.1.A.1.d.1 for one residual heat removal (RHR) loop when the average reactor coolant loop temperature is less than or equal to 350°F. This 2-hour AOT would be provided to accommodate plant safety and emergency power systems surveillance testing. The requested changes would also revise TS 3.1.G.1 to permit depressurizing the safety injection accumulators in lieu of accumulator isolation when the average reactor coolant loop temperature is less than or equal to 350°F.

2.0 EVALUATION

2.1 RHR Loop Operability

TS 3.1.A.1.d.1 currently requires a minimum of two non-isolated loops, consisting of any combination of reactor coolant loops or RHR loops, to be operable when the average reactor coolant loop temperature is less than or equal to 350°F. This requirement ensures a reliable method for cooling the reactor core and removing decay heat. During cold shutdown conditions, the RHR loops are used for this cooling function. A single RHR loop is sufficient to provide the required cooling capacity. However, TS 3.1.A.1.d.1 currently does not contain any provisions for removing one of the two required RHR loops from an operable status to permit required surveillance testing. Therefore, the licensee has proposed to modify TS 3.1.A.1.d.1 to permit a 2-hour AOT for performing surveillance testing of one RHR loop at a time provided the other RHR loop is operable and in operation.

The use of AOTs is not precluded by 10 CFR 50.36(c)(2) which states: "When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." Specification of a 2-hour AOT for one RHR loop to perform surveillance testing when the average reactor coolant loop temperature is less than or equal to 350°F is consistent

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with current NRC staff positions (as reflected in the NRC's Improved Standard Technical Specifications, NUREG-1431, Revision 1). Therefore, the NRC staff finds the proposed change to TS 3.1.A.1.d.1 to add a 2-hour AOT for the purpose of performing surveillance testing of one RHR loop at a time acceptable.

## 2.2 Safety Injection Accumulator Depressurizing

TS 3.1.G.1.b currently requires the safety injection accumulators to be isolated from the reactor coolant system (RCS) by closed discharge isolation valves with their respective circuit breakers locked open whenever the RCS average temperature is less than or equal to 350°F and the reactor vessel head is bolted. TS 3.1.G.1.b permits the accumulator discharge isolation valves to be opened for up to 6 hours to perform valve testing. The licensee has proposed to modify TS 3.1.G.1.b to permit either: (1) continued isolation of the accumulators by closed discharge isolation valves (with their respective breakers locked, sealed or otherwise secured in the open position) or (2) depressurization of the accumulators to less than the pressurizer Power Operated Relief Valve (PORV) setpoint (385 psig) as specified in TS 3.1.G.1.c.(4).

The purpose of isolating the accumulators from the RCS when RCS average temperature is less than or equal to 350°F and the reactor vessel head is bolted is to preclude overpressurizing the RCS in the event of an inadvertent discharge of an accumulator. The current requirement to isolate the accumulators by closing their discharge isolation valves with their breakers locked open prevents inadvertent overpressurization of the RCS due to an inadvertent discharge of an accumulator. Reducing the accumulator pressure to less than the PORV setpoint will also eliminate the potential for overpressurization of the RCS due to an inadvertent discharge of an accumulator. Therefore, the proposed change to TS 3.1.G.1.b is acceptable since this proposed change will also preclude overpressurization of the RCS due to inadvertent discharge of an accumulator.

Additional changes were proposed to restructure TS 3.1.G.1.b. The proposed restructuring of TS 3.1.G.1.b is only administrative in nature and does not change the requirements of TS 3.1.G.1.b and is, therefore, acceptable.

## 3.0 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.

## 4.0 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 (60 FR 39455). 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.

#### 5.0 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: Donald S. Brinkman

Date: September 1, 1995