March 7, 1994

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: AUXILIARY FEEDWATER SYSTEM TESTING (TAC NOS. M88422 AND M88423)

The Commission has issued the enclosed Amendment No. 190 to Facility Operating License No. DPR-32 and Amendment No. 190 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 December 10, 1993.

These amendments modify the surveillance requirements for the Auxiliary Feedwater System pumps and valves, define "staggered test basis," and make administrative changes to the TS.

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. 190 to DPR-32
2. Amendment No. 190 to DPR-37
3. Safety Evaluation

cc w/enclosures:
See next page

OFC	:LA:PDII-2	:PE:PDII-2	:PM:PDII-2	:D:PDII-2	:EMEB	:OGC	
NAME	:ETana	:RCroteau	:BBuckley	:HBerkow	:JNorberg	:EHoller	
DATE	:2/15/94	:2/15/94	:2/15/94	:2/17/94	:2/16/94	:2/22/94	

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Surry Power Station

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DATED: March 7, 1994

AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1
AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File
NRC & Local PDRs
PDII-2 Reading
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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. 190
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 December 10, 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. 190 , 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: March 7, 1994

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. 190
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 December 10, 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. 190 , 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: March 7, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages	Insert Pages
TS 1.0-8	TS 1.0-8
TS 1.4-9d	TS 4.1-9d
TS 4.8-1	TS 4.8-1
TS 4.8-2	TS 4.8-2
TS 4.8-3	TS 4.8-3
---	TS 4.8-4

W. STAGGERED TEST BASIS

A staggered test basis shall consist of:

a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals, and

b. The testing of one system, subsystem, train, or other designated component at the beginning of each subinterval.

TABLE 4.1-2A (CONTINUED)

MINIMUM FREQUENCY FOR EQUIPMENT TESTS

	DESCRIPTION	TEST	FREQUENCY	UFSAR SECTION REFERENCE
18.	Primary Coolant System	Functional	1. Periodic leakage testing[a][b] on each valve listed in Specification 3.1.C.7a shall be accomplished prior to entering power operation condition after every time the plant is placed in the cold shutdown condition for refueling, after each time the plant is placed in cold shutdown condition for 72 hours if testing has not been accomplished in the preceding 9 months, and prior to returning the valve to service after maintenance, repair or replacement work is performed.	
19.	Containment Purge MOV Leakage	Functional	Semi-Annual (Unit at power or shutdown) if purge valves are operated during interval[c]	
20.	Containment Hydrogen Analyzers	a. Channel Functional Test b. Channel Calibration Test 1. Sample gas used: One volume percent (±0.25%) hydrogen, balance nitrogen Four volume percent (±0.25%) hydrogen, balance nitrogen 2. Channel Calibration test will include startup and operation of the Heat Tracing System	Once per 31 days Once per 92 days on a STAGGERED TEST BASIS	
21.	RCS Flow	Flow ≥ 273,000 gpm	Once per refueling cycle	14
22.	RWST Parameters	a. Temperature ≤ 45°F b. Volume ≥ 387,100 gallons	Once per shift· Once per shift	

(a) To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

(b) Minimum differential test pressure shall not be below 150 psid.

(c) Refer to Section 4.4 for acceptance criteria.

* See Specification 4.1.D.

4.8 AUXILIARY FEEDWATER SYSTEM

Applicability

Applies to the periodic testing requirements of the Auxiliary Feedwater System.

Objective

To verify the operability of the auxiliary feedwater pumps.

Specification

A. Tests and Frequencies

1. At least once per 31 days:

   a. Verify that the Auxiliary Feedwater System manual, power operated, and automatic valves in each flow path are in the correct position. This verification includes valves that are not locked, sealed, or otherwise secured in position, valves in the the cross-connect from the opposite unit and valves in the steam supply paths to the turbine driven auxiliary feedwater pump.

2. At least once per 92 days:

   a. Verify that each motor-operated valve in the auxiliary feedwater flow paths, including the cross-connect from the opposite unit, performs satisfactorily when tested in accordance with Specifications 4.0.5.

3. At least once per 92 days on a STAGGERED TEST BASIS:

   a. Verify that the auxiliary feedwater pumps perform satisfactorily when tested in accordance with Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for the turbine driven pump.

4a. Within 72 hours prior to Reactor Coolant System temperature and pressure exceeding 350°F and 450 psig, respectively, the motor driven auxiliary feedwater pumps shall be flow tested from the 110,000 gallon above ground Emergency Condensate Storage Tank to the steam generators .

4b. Wthin 72 hours after achieving reactor criticality, the steam turbine driven auxiliary feedwater pump shall be flow tested from the 110,000 gallon above ground Emergency Condensate Storage Tank to the steam generators. The provisions of Specification 4.0.4 are not applicable.

5. During periods of reactor shutdown with the opposite unit's Reactor Coolant System temperature and pressure greater than 350° F and 450 psig, respectively:

   a. Continue to verify that the motor driven auxiliary feedwater pumps perform satisfactorily when tested at the frequency defined in Specification 4.8.A.3.

   b. Verify that each motor-operated valve in the auxiliary feedwater cross-connect flow path for the opposite unit performs satisfactorily when tested in accordance with Specifications 4.0.5.

B. Acceptance Criteria

The pump and valve tests, except the system flow test, shall be considered satisfactory if they meet the ASME Section XI Inservice Testing Program acceptance criteria.

The system flow tests during unit startup from COLD SHUTDOWN or REFUELING SHUTDOWN shall be considered satisfactory if the control board indication demonstrates that flow paths exist to each steam generator.

Basis

The correct alignment for manual, power operated, and automatic valves in the Auxiliary Feedwater System steam and water flow paths, including the cross-connect flow path, will provide assurance that the proper flow paths exist for system operation. This position check does not include: 1) valves that are locked, sealed or otherwise secured in position since they are verified to be in their correct position prior to locking, sealing or otherwise securing; 2) vent, drain or relief valves on those flow paths; and, 3) those valves that cannot be inadvertently misaligned such as check valves. This surveillance does not require any testing or valve manipulation. It involves verification that those valves capable of being mispositioned are in the correct position.

The auxiliary feedwater pump will be tested periodically in accordance with ASME Section XI to demonstrate operability. The pumps are flow tested on recirculation to the 110,000 gallon Emergency Condensate Storage Tank. Valves in the flow path to the steam generators and cross-connect flow path are tested periodically in accordance with ASME Section XI.

The auxiliary feedwater pumps are capable of supplying feedwater to the opposite units steam generators. For a main steam line break or fire event in the Main Steam Valve House, one of the opposite units auxiliary feedwater pumps is required to supply feedwater to mitigate the consequences of those accidents. Therefore, when considering a single failure, both motor driven auxiliary feedwater pumps are required to be OPERABLE* during shutdown to support the opposite unit if the Reactor Coolant System temperature or pressure of the opposite unit is greater than 350°F and 450 psig, respectively. Thus, to establish operability* the motor driven auxiliary feedwater pumps will continue to be tested quarterly on the same STAGGERED TEST BASIS when the unit is shutdown to support the opposite unit. The turbine driven pump is not required to be OPERABLE when the unit is shutdown and therefore, is not tested during periods of shutdown.

* excluding automatic initiation instrumentation

The capacity of the Emergency Condensate Storage Tank and the flow rate of any one of the three auxiliary feedwater pumps in conjunction with the water inventory of the steam generators is capable of maintaining the plant in a safe condition and sufficient to cool the unit down.

Proper functioning of the steam turbine admission valve and the ability of the auxiliary feedwater pumps to start will demonstrate the integrity of the system. Verification of correct operation can be made both from instrumentation within the Main Control Room and direct visual observation of the pumps.

References

UFSAR Section 10.3.1 Main Steam System
UFSAR Section 10.3.2 Auxiliary Steam System

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 190 TO FACILITY OPERATING LICENSE NO. DPR-32

AND AMENDMENT NO. 190 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 December 10, 1993, Virginia Electric and Power Company (the licensee) proposed to change the surveillance frequency of the Auxiliary Feedwater (AFW) System pumps from monthly to quarterly in accordance with the guidance provided in Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for testing During Power Operation." The proposed amendment would, in part, modify the Technical Specifications (TS) to incorporate a portion of the line-item TS improvements that were identified by the NRC staff as reported in NUREG-1366, "Improvements to Technical Specification Surveillance Requirements," dated December 1992. The TS improvements were based on an NRC study of surveillance requirements and included information provided by licensee personnel that plan, manage, and perform surveillances.

Changes are also proposed to the surveillance requirements of valves to establish a consistent approach for testing of the AFW System. Also proposed are a definition for "staggered test basis" and administrative changes.

2.0 PROPOSED TECHNICAL SPECIFICATION CHANGES AND EVALUATION

2.1 A definition of "staggered test basis" is proposed for Section 1.0, "Definitions." This definition did not exist in the current TS.

This definition is consistent with NUREG-0452, "Standard Technical Specifications for Westinghouse Pressurized water Reactors," Revision 4A. Although this is not the latest definition for STAGGERED TEST BASIS as defined in NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," dated September 1992, the proper surveillance intervals are achieved and the change is, therefore, acceptable.

2.2 The test frequency noted in Technical Specification Table 4.1-2A, item 20, "Containment Hydrogen Analyzers," is changed from "staggered basis," to "STAGGERED TEST BASIS."

This change is acceptable since it is administrative and does not change the current TS requirements.

2.3 A new requirement is proposed to verify, at least once per 31 days, that manual, power-operated and automatic valves in each AFW flow path are in the correct position.

This change is consistent with Generic Letter 93-05, the Westinghouse Standard Technical Specifications, and is more restrictive than the existing TS requirements. This change is technically acceptable.

2.4 Deletion of the current TS requirement to exercise the AFW pump discharge valves monthly is proposed. A new requirement to verify that each motor-operated valve (MOV) in the AFW flow path performs satisfactorily per ASME Section XI is proposed.

The AFW pump discharge valves are normally open MOVs. These valves are required to be tested per the ASME Code and the licensee has chosen to include the requirement in Section 4.8 of the TS. Verification of proper operation of the MOVs per the ASME Code provides adequate level of assurance of proper operation, and is, therefore, acceptable.

2.5 Performance of AFW pump operability testing quarterly on a staggered test basis rather than monthly is proposed. Satisfactory performance of the pumps is proposed to be determined by reference to TS 4.0.5, which invokes ASME Section XI, rather than the current TS criteria to "flow test for 15 minutes to determine operability."

This changes the frequency of the surveillance on a particular AFW pump from monthly to quarterly. This change is consistent with Generic Letter 93-05, standard TS, and the ASME Code.

NUREG-1366 provided the following information on AFW pump and system testing. AFW pumps are the only Class 1, 2, or 3 centrifugal pumps tested more frequently than quarterly. A change of the test frequency of AFW pumps to quarterly on a staggered basis was recommended (test one pump monthly in this case). Analysis of AFW pump failures indicates that a monthly test interval for all AFW pumps may be contributing to pump unavailability through failures and equipment degradation. Conducting the tests on a staggered basis will permit system testing monthly, while reducing AFW pump testing to quarterly, thereby maintaining a consistent degree of reliability.

The staff finds that the Code quarterly-testing frequency is adequate to detect degradation and monitor pump performance. The NRC endorses the ASME Code, Section XI, and references this Code in 10 CFR 50.55a as the requirements of inservice testing (IST) for pumps.

For the reasons addressed above, this change is acceptable.

2.6 The following changes for AFW testing while shut down are proposed. The current TS allowed reducing testing requirements while shut down such that monthly testing of only one AFW pump and associated discharge valves was required. The changes require that the motor-driven AFW pumps and the MOVs in the cross-connected flow path for the opposite unit continue to be tested when the unit is shut down with the opposite unit's reactor coolant system temperature and pressure greater than 350° F and 450 psig, respectively.

These changes are proposed to be consistent with the proposed testing during plant operations. One of the opposite unit's AFW pumps is required to mitigate the consequences of a main steam line break or fire event in the Main Steam Valve House. Since the motor-operated pumps and valves will continue to be tested on a quarterly basis per the ASME Code, and Code quarterly-testing frequency is adequate to detect degradation and monitor pump and valve performance, this change is acceptable.

2.7 Also proposed are administrative changes such as: 1) grammar and punctuation; 2) correction of system or component names; and 3) capitalization of defined words.

These changes are acceptable since they are administrative and do not change the current TS requirements.

2.8 The staff concludes that the proposed TS changes do not adversely affect plant safety and will result in a net benefit to the safe operation of the facility, and, therefore, are 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 CONSIDERATIONS

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, and make administrative changes. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluent 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 (59 FR 2873). 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 NRC staff has concluded, on the basis of 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Croteau

Date: March 7, 1994