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Docket Nos. 50-280
and 50-281

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Mr. W. L. Stewart
Vice President - Nuclear Operations
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Stewart:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. 66359 AND 66360)

The Commission has issued the enclosed Amendment No. 114 to Facility Operating License No. DPR-32 and Amendment No. 114 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to the Technical Specifications in response to your application transmitted by letter dated September 25, 1987, as superseded October 7, 1987.

The amendments revise Section 4.7, "Main Steam Line Trip Valves" of the Surry Units 1 and 2 Technical Specifications (TS) by removing the partial-closure test specified in Sections 4.7A and 4.7B and replacing it with a more rigorous full-closure test to be performed at each startup. The amendments also revise the acceptance criteria for the Main Steam Trip Valve (MSTV) closure time testing. Table 4.1-2A is also revised to be consistent with TS 4.7.

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

Chandu P. Patel, Project Manager
Project Directorate II-2
Division of Reactor Projects-I/II

Enclosures:
1. Amendment No. 114 to DPR-32
2. Amendment No. 114 to DPR-37
3. Safety Evaluation

cc: w/enclosures
See next page

*See previous concurrence

*LA:PDII-2	*PM:PDII-2	*D:PDII-2	*AD:PD2A	*RSB	*OGC
DMiller	CPatel:bg	HBerkow	GLainas	WHodges	MYoung
10/21/87	10/21/87	10/21/87	10/23/87	10/23/87	10/25/87

November , 1987

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10/21/87	10/21/87	10/21/87	10/22/87	10/23/87	10/26/87

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

Surry Power Station

cc:
Mr. Michael W. Maupin
Hunton and Williams
Post Office Box 1535
Richmond, Virginia 23213

Attorney General
Supreme Court Building
101 North 8th Street
Richmond, Virginia 23219

Mr. Robert F. Saunders, Manager
Surry Power Station
Post Office Box 315
Surry, Virginia 23883

Resident Inspector
Surry Power Station
U.S. Nuclear Regulatory Commission
Post Office Box 166, Route 1
Surry, Virginia 23883

Mr. Sherlock Holmes, Chairman
Board of Supervisors of Surry County
Surry County Courthouse
Surry, Virginia 23683

W. T. Lough
Virginia Corporation Commission
Division of Energy Regulation
Post Office Box 1197
Richmond, Virginia 23209

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street N.W., Suite 2900
Atlanta, Georgia 30323

James B. Kenley, M.D., Commissioner
Department of Health
109 Governor Street
Richmond, Virginia 23219

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
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 September 25, 1987, as superseded October 7, 1987, 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. 114 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 17, 1987

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114
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 September 25, 1987, as superseded October 7, 1987, 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. 114 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 17, 1987

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 114 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 114 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages	Insert Pages
Table 4.1-2A	Table 4.1-2A
TS 4.7-1	TS 4.7-1
TS 4.7-2	TS 4.7-2
--	TS 4.7-3

where

I = Instrument response time (delay from the time the process variable reaches the setpoint to initiation of bleedoff of instrument air from the main steam trip valve air cylinders), seconds.

B = Time delay from initiation of bleedoff of instrument air from the main steam trip valve air cylinders to initiation of valve motion, seconds.

S = Valve stroke time (full open to full closed), seconds.

The instrument response time I is represented by a value of 1.0 seconds based on a conservative evaluation of the actual response time. The bleedoff time B is equivalent to the measured interval T1 as defined in the Acceptance Criteria section of the Specification. The stroke time S is conservatively approximated by the measured interval T2 as defined in the Specification. Under actual steam line break conditions it is expected that S will be much less than T2, since valve closure is flow assisted. Thus the acceptance criterion may be rewritten as shown in Section 4.7.B.1.

T1 = measured elapsed time from manual initiation of steam line isolation to initiation of main steam trip valve motion, seconds

T2 = measured elapsed main steam trip valve stroke time (full open to full closed), seconds

Basis

The main steam trip valves serve to limit an excessive Reactor Coolant System cooldown rate and resultant reactivity insertion following a main steam line break accident. Their ability to close fully within the maximum allowable time specified shall be verified prior to reactor startup.

The acceptance criteria reflect the assumptions made in the safety analysis of a main steam line break accident. The analysis assumes a 5 second delay from the time the system process variables reach the design setpoints to initiation of valve motion, followed by a 5 second linear ramp closure of the valve.

The acceptance criteria are established to ensure this safety analysis assumption is maintained. Thus the criteria may be written as follows:

a. I + B less than or equal to 5 seconds and

b. S less than or equal to 5 seconds

4.7 MAIN STEAM LINE TRIP VALVES

Applicability

Applies to periodic testing of the main steam line trip valves.

Objective

To verify the ability of the main steam line trip valves to close upon signal.

Specification

A. Tests and Frequencies

1. Each main steam line trip valve shall be tested for full closure before each startup, unless a satisfactory test has been conducted within the previous 24 hours.

B. Acceptance Criteria

1. A full closure test of a main steam line trip valve shall be considered satisfactory if the following criteria are met:

    a. T1 less than or equal to 4.0 seconds and

    b. T2 less than or equal to 5.0 seconds

where

TABLE 4.1-2A

MINIMUM FREQUENCY FOR EQUIPMENT TESTS

	DESCRIPTION	TEST	FREQUENCY	FSAR SECTION REFERENCE
1.	Control Rod Assemblies	Rod drop times of all full length rods at hot conditions	Each refueling shutdown or after disassembly or maintenance requiring the breach of the Reactor Coolant System integrity	7
2.	Control Rod Assemblies	Partial movement of all rods	Every 2 weeks	7
3.	Refueling Water Chemical Addition Tank	Functional	Each refueling shutdown	6
4.	Pressurizer Safety Valves	Setpoint	Each refueling shutdown	4
5.	Main Steam Safety Valves	Setpoint	Each refueling shutdown	10
6.	Containment Isolation Trip	*Functional	Each refueling shutdown	5
7.	Refueling System Interlocks	*Functional	Prior to refueling	9.12
8.	Service Water System	*Functional	Each refueling shutdown	9.9
9.	Fire Protection Pump and Power Supply	Functional	Monthly	9.10
10.	Primary System Leakage	*Evaluate	Daily	4
11.	Diesel Fuel Supply	*Fuel Inventory	5 days/week	8.5
12.	Boric Acid Piping Heat Tracing Circuits	*Operational	Monthly	9.1
13.	Main Steam Line Trip Valves	Functional (Full Closure)	Before each startup (TS 4.7)	10

Amendment Nos. 114 and 114

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. DPR-32

AND AMENDMENT NO. 114 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

I. INTRODUCTION

By letter dated September 25, 1987, as superseded October 7, 1987, Virginia Electric and Power Company (the licensee) requested amendments to Facility Operating License Nos. DPR-32 and DPR-37, issued to the licensee for operation of the Surry Nuclear Power Station, Units 1 and 2, located in Surry County, Virginia.

The proposed amendments would revise Section 4.7, "Main Steam Line Trip Valves" of the Surry Units 1 and 2 Technical Specifications by removing the partial-closure test specified in Sections 4.7A and 4.7B and replacing it with a more rigorous full-closure test to be performed at each start-up. Also, the proposed amendments would remove the discussion of the partial-closure test from the Bases section of the Technical Specifications (TS). The proposed amendments would also revise the full-closure test frequency and test conditions, as well as the full-closure test acceptance criteria for the main steam trip valves. A parallel specification in Table 4.1-2A would also be revised to be consistent with the proposed revision to TS 4.7. Finally, the Bases section would be expanded to include a discussion of the accident analysis assumptions and derivation of the acceptance criteria for the valve closure time.

II. EVALUATION

The current TS for Surry Units 1 and 2 require the licensee to perform a partial-closure test of Main Steam Trip Valves (MSTV's) before each startup. The partial-closure test rotates the valve disk three degrees to verify the freedom of the valve disk to function as required. The current TS also require a full-closure test for MSTV's before startup from every cold shutdown. The licensee has indicated that, in practice, a full-closure test is performed before each startup regardless of whether the unit is starting from cold shutdown or hot shutdown. Thus, the full-closure test satisfies the intent and frequency requirements for both tests. The licensee has proposed to perform a full-closure test before each startup instead of at each cold shutdown as required by the current TS. The

full-closure test will cover the intent and frequency requirements for the partial-test delineated in current TS. Thus, the partial-closure test is not necessary and therefore, the removal of partial-closure test requirement is acceptable. Also, as noted above, the licensee has proposed to perform a full-closure test for the MSTV's at each startup (regardless of whether the unit is starting up from cold or hot shutdown) instead of at each startup from a cold shutdown condition. This will increase the frequency of full-closure tests from the current TS. Also, the licensee may perform the test during hot shutdown, which is more representative of plant conditions the valves would experience if called upon to perform their safety function. The staff considers both of these changes to be appropriate and therefore acceptable.

Also, in order to make the test procedures consistent with the interpretation of ASME Section XI requirements, the licensee has proposed to change the acceptance criterion for MSTV closure time from the present 5 seconds to a total of 9 seconds, consisting of a 4 second period from a manual initiation of the steam line isolation to initiation of MSTV motion, and a 5 second period for MSTV closure time from the full-open to the full-closed position. The licensee stated that the proposed closure times closely reflect the current bounding main steam line break analysis discussed in Section 14.3.2 of the Surry Updated Final Safety Analysis Report. The licensee originally submitted the above analysis by a letter dated September 13, 1983, to support the removal of the TS for the boron injection tank. The above analysis assumes a 5 second delay from the time the measured process variables (e.g., steam line flow, steam line pressure) reach the main steam line isolation setpoints to the initiation of MSTV motion, followed by an additional 5 second ramp closure of the valves.

In proposing the above time periods, the licensee has conservatively allowed 1 second for instrument response time delay from the time the process variable reaches the setpoint to initiation of bleed-off of instrument air from the main steam trip valve air cylinders. The bleed-off time is estimated to be 4 seconds. The MSTV closure time is also estimated to be 5 seconds. Under actual steam line break conditions, it is expected that the MSTV closure time (stroke time) will be much less than 5 seconds. Also, closure of the MSTV's under test conditions requires venting of the control solenoid operated valves (SOV's) located in the auxiliary building. The long run of air piping between the SOV's and the MSTV air cylinders results in a relatively large volume of air, which must bleed-off before the valves will close. Under test conditions, air pressure must decrease from a nominal 90 psig to approximately 32 psig before the valve will start to close. Under full-steam flow conditions, not only will the steam flow assist in rapidly closing the valves, but rupture disks in the air cylinders will assist faster closure of MSTV's.

The staff has reviewed the licensee's assumptions used in the main steam line break analysis, and determined that the proposed test acceptance criteria for MSTV closure times are consistent with the analysis. Also, the staff recognizes that under high steam flow during main steam line break conditions, the MSTV will close in much less time than the test condition because steam flow will assist the valve closure and the rupture

disks in the air cylinders will depressurize the air cylinders faster, which will assist valve closure. Also, using the above conservative assumptions, the licensee has demonstrated that the offsite dose consequences from a main steam line break will be a small fraction of the 10 CFR Part 100 guidelines. Therefore, the proposed test acceptance criteria for MSTV closure time are acceptable.

In addition, the licensee has proposed to change the Bases for TS 4.7 and Table 4.1-2A of the Surry TS to reflect the proposed changes in TS 4.7. Both of these changes are acceptable as they provide consistency in the TS.

III. ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of facilities components located within the restricted areas as defined in 10 CFR 20 and changes surveillance requirements. The staff has determined that these 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. 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.

IV. CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: November 17, 1987

Principal Contributor:

C. P. Patel