

March 15, 1988

*Posted*  
*Amdt 118*  
*to DPR-37*

Docket Nos. 50-280  
 and 50-281

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

Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: CORE EXIT  
 THERMOCOUPLES AND SMOKE DETECTORS (TAC NOS. 65413, 65414,  
 65899 AND 65900)

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The Commission has issued the enclosed Amendment No. 118 to Facility Operating License No. DPR-32 and Amendment No. 118 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 two applications transmitted by letters dated April 23, 1987 and May 29, 1987.

These amendments include the core exit thermocouple (CET) system in the accident monitoring instrumentation listed in Tables 3.7-6 and 4.1-2 of the Surry Technical Specifications. The changes address the CET requirements of NUREG-0737, Item II.F.2, "Instrumentation for Detection of Inadequate Core Cooling." In addition, minor editorial changes are made in both of the above tables to reflect the consolidation of the CET system along with the already existing subcooling margin monitor (SMM) and the reactor vessel level indicating system (RVLIS) into one system called the inadequate core cooling monitor.

In addition, these amendments revise Table 3.21-1 of the Surry Technical Specifications by adding two additional smoke detectors to the listing for the Auxiliary Building General Area. The additional smoke detectors were added to satisfy the requirements of Appendix R to 10 CFR Part 50.

Mr. W. L. Stewart

- 2 -

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,

/s/

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

Enclosures:

1. Amendment No. 118 to DPR-32
2. Amendment No. 118 to DPR-37
3. Safety Evaluation

cc w/enclosures:  
See next page

*[Signature]*  
LA: PDII-2  
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Mr. W. L. Stewart  
Virginia Electric and Power Company

Surry Power Station

cc:

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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. 118  
License No. DPR-32

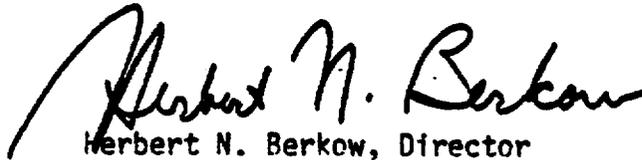
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The applications for amendment by Virginia Electric and Power Company (the licensee) dated April 23, 1987 and May 29, 1987, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and 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. 118, 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, and shall be implemented within 30 days from the date of its issuance.

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 15, 1988



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. 118  
License No. DPR-37

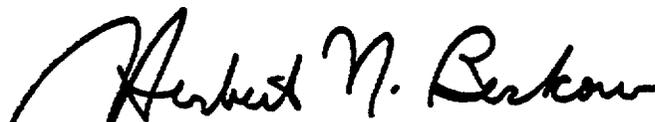
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The applications for amendment by Virginia Electric and Power Company (the licensee) dated April 23, 1987 and May 29, 1987, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and 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. 118, 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, and shall be implemented within 30 days from the date of its issuance.

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 15, 1988

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 118 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 118 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

TS 3.7-21  
TS 3.21-7  
TS 4.1-9a

Insert Pages

TS 3.7-21  
TS 3.21-7  
TS 4.1-9a

TABLE 3.7-6

ACCIDENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Auxiliary Feedwater Flow Rate	1 per S/G	1 per S/G
2. Inadequate Core Cooling Monitor		
a. Reactor Vessel Coolant Level Monitor	2	1
b. Reactor Coolant System Subcooling Margin Monitor	2	1
c. Core Exit Thermocouples	2 (Note 2)	1 (Note 2)
3. PORV Position Indicator (Primary Detector)	1/valve	1/valve
4. PORV Position Indicator (Backup Detector)	1/valve	0
5. PORV Block Valve Position Indicator	1/valve	1/valve
6. Safety Valve Position Indicator (Primary Detector)	1/valve	1/valve
7. Safety Valve Position Indicator (Backup Detector)	1/valve	0
8. Containment Pressure	2	1
9. Containment Water Level (Narrow Range)	2	1
10. Containment Water Level (Wide Range)	2	1
11. Containment High Range Radiation Monitor	2	1 (Note 1, b and c only)
12. Process Vent High Range Effluent Monitor	2	2 (Note 1, a, b, and c)
13. Ventilation Vent High Range Effluent Monitor	2	2 (Note 1, a, b, and c)
14. Main Steam High Range Radiation Monitors (Units 1 and 2)	3	3 (Note 1, a, b, and c)
15. Aux. Feed Pump Steam Turbine Exhaust Radiation Monitor	1	1 (Note 1, a, b, and c)

Note 1: With the number of operable channels less than required by the Minimum Channels Operable requirements

- Initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours
- Either restore the inoperable channel to operable status within 7 days of the event, or
- Prepare and submit a Special Report to the commission pursuant to specification 6.2 within 30 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable.

Note 2: A minimum of 2 core exit thermocouples per quadrant is required for the channel to be operable.

TABLE 3.21-1  
FIRE DETECTION INSTRUMENTS

<u>INSTRUMENT LOCATION</u>	<u>MINIMUM INSTRUMENTS OPERABLE</u>	
	<u>Heat</u>	<u>Smoke</u>
1. Containment (Reactor Coolant Pumps Only)***	1 per RCP	-
2. Containment Cable Penetration Area		4
3. Containment Recirculation Air System		1
4. Cable Tray Room	3	4
5. Cable Tunnel	2	3
6. Cable Vault Area		
Lower Area	1	2
Upper Area	1	1
7. Charcoal Filter Banks	1 per bank	-
8. Emergency Diesel Generator Room	1 per room	-
9. Fuel Oil Tank Room (river)	1**	1
10. Fuel Oil Transfer Pump Houses	1 per house**	-
11. Control Room		4
12. Emergency Switchgear Room		3
13. Auxiliary Building General Area		14
14. Auxiliary Building Charging Pump Cubicles		1 per cubicle
15. Main Steam Valve House		3
16. Safeguards Area		1
17. Fuel Building		1
18. Fire Pump Building		2
19. Mechanical Equipment Room #3		1
20. Battery Room 1A		1
21. Battery Room 1B		1
22. Battery Room 2A		1
23. Battery Room 2B		1

\*\* Rate of rise actuation devices for high pressure CO<sub>2</sub> system

\*\*\* One heat detector installed per pump. RCP pump bearing and motor temperature will be monitored once per hour if the RCP heat detector is inoperable.

TABLE 4.1-2

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Auxiliary Feedwater Flow Rate	P	R
2. Inadequate Core Cooling Monitor	M	R
3. PORV Position Indicator (Primary Detector)	M	R
4. PORV Position Indicator (Backup Detector)	M	R
5. PORV Block Valve Position Indicator	M	R
6. Safety Valve Position Indicator	M	R
7. Safety Valve Position Indicator (Backup Detector)	M	R
8. Containment Pressure	M	R
9. Containment Water Level (Narrow Range)	M	R
10. Containment Water Level (Wide Range)	M	R

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M = Monthly  
P = Prior to each startup if not done within the previous week  
R = Refueling



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 118 TO FACILITY OPERATING LICENSE NO. DPR-32  
AND AMENDMENT NO. 118 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

INTRODUCTION AND BACKGROUND

In November 1980, the staff issued NUREG-0737, "Clarification of TMI Action Plan Requirements," which included all TMI Action Plan Items approved by the Commission for implementation at nuclear power reactors. NUREG-0737 identified those items for which Technical Specifications were scheduled for implementation after December 31, 1981. The staff provided guidance on the scope of the Technical Specifications for all of these items in Generic Letter 83-37, which was issued to all Pressurized Water Reactor (PWR) licensees on November 1, 1983. In this Generic Letter, the staff requested licensees to:

1. review their facility's Technical Specifications to determine if they were consistent with the guidance provided in the Generic Letter, and
2. submit an application for a license amendment where deviations or absence of Technical Specifications were found.

The guidance on TMI Action Plan Item II.F.2, "Instrumentation for Detection of Inadequate Core Cooling" was also included in Generic Letter 83-37. By letter dated April 23, 1987, Virginia Electric and Power Company (the licensee) proposed Technical Specifications changes to include the core exit thermocouple (CET) system in the accident monitoring instrumentation in Tables 3.7-6 and 4.1-2 of the Technical Specifications (TS) for Surry Units 1 and 2. The proposed changes addressed the CET requirements of NUREG-0737, Item II.F.2.

In addition, by letter dated May 29, 1987, the licensee proposed to revise Table 3.21-1 of the Surry TS by adding two additional smoke detectors to the listing for the auxiliary building general area. The total number of smoke detectors would increase from 12 to 14 for this area.

DISCUSSION AND EVALUATION

Core Exit Thermocouple System

Generic Letter 83-37 provided guidance on TS for the subcooling margin monitors (SMM), reactor vessel coolant level indicating system (RVLIS) and CET. The TSs for the RVLIS and SMM are already included in the current TS for Surry Units 1 and 2.

However, the licensee recently completed the installation of an inadequate core cooling monitor (ICCM) in accordance with the requirements of NUREG-0737, Item II.F.2. The ICCM is a consolidated system comprised of the RVLIS, SMM and CET systems. Upon completion of the ICCM's installation and upgrading of the CET, the licensee proposed to include the TS for the CET system along with other accident monitoring instrumentation in Tables 3.7-6 and 4.1-2 of the Surry Units 1 and 2 Technical Specifications.

As discussed above, the CET system has been consolidated into the ICCM. The proposed changes will revise TS Table 3.7-6 to show this system consolidation by adding the CET along with the already present SMM and RVLIS as subsections under the ICCM. The proposed changes will also revise TS Table 4.1-2 by deleting the individual surveillance requirements for the SMM and RVLIS, and by including the surveillance requirements for the consolidated ICCM.

The proposed changes do not affect the existing Limiting Conditions for Operation (LCO) for the RVLIS and SMM delineated in Table 3.7-6. The proposed LCO for the CET provides additional conservatism in the TS and is consistent with the guidelines provided by the staff in Generic Letter 83-37. Therefore, the staff finds the changes to be acceptable. Surveillance requirements for the RVLIS, SMM and CET are included in the surveillance requirements for ICCM. The surveillance requirements for the ICCM are consistent with the guidance provided by the staff in Generic Letter 83-37, and they are also consistent with other accident monitoring instrumentation at the Surry units. Therefore, they are acceptable to the staff. Some editorial changes in both of the above tables reflect the consolidation of the RVLIS and SMM into the ICCM. These changes are of an editorial nature and hence, they are acceptable to the staff.

Based on the above evaluation, the staff finds proposed changes in Tables 3.7-6 and 4.1-2 to be acceptable.

#### Smoke Detectors

By letter dated May 29, 1987, the licensee proposed to add two additional smoke detectors in Item No. 13, Auxiliary Building General Area, of Table 3.21-1 of the Surry Technical Specifications. The total number of detectors in this area will increase from 12 to 14. These additional smoke detectors were added to satisfy the requirements of 10 CFR Part 50, Appendix R, to provide fire detection capabilities in the auxiliary building in the vicinity of the charging pump-cooling water pumps.

The proposed change will enhance the ability to detect the fires in their early stages, and hence, reduce the potential for damage to safety-related equipment in the auxiliary building. Thus, the proposed change provides additional conservatism in the TS for both Surry units. Therefore, the staff finds the proposed change to be acceptable.

#### ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20 or changes to 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.

**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: March 15, 1988

**Principal Contributor:**

C. P. Patel