February 17, 1988

Docket Nos. 50-280
and 50-281

Mr. W. L. Stewart
Vice President - Nuclear Operations
Virginia Electric and Power Company
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Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: CHANGES TO SECTIONS 3.7 AND 4.1 (TAC NOS. 55380, 55381, 60307 AND 60308)

The Commission has issued the enclosed Amendment No. 117 to Facility Operating License No. DPR-32 and Amendment No. 117 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to the Technical Specifications in response to your application transmitted by letter dated October 31, 1985, as superseded by letters dated September 25, 1986, and May 22, 1987, as well as by application dated April 12, 1985, as revised September 9, 1985 and October 7, 1985, and superseded September 25, 1986 and May 22, 1987, and as supplemented October 23, 1987.

These amendments change Section 3.7, "Instrumentation Systems," and Section 4.1, "Operational Safety Review," of the Technical Specifications (TS) for Surry Units 1 and 2, to bring the TS into closer agreement with the Westinghouse Standard Technical Specifications, as well as to conform with the guidance provided by the NRC staff.

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. 117 to DPR-32
2. Amendment No. 117 to DPR-37
3. Safety Evaluation

cc w/enclosures:
See next page

LA:PD22	PM:PD22	D:PD22	OGC-Bethesda
DMiller	CPatel:bd	HBerkow	R Bachmann
2/4/88	2/8/88	2/17/88	2/10/88
			w/addition to FRN

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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. 117
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   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated October 31, 1985, as superseded September 25, 1986 and May 22, 1987; and the application dated April 12, 1985, as revised September 9, 1985 and October 7, 1985, and superseded September 25, 1986, and May 22, 1987, and as supplemented October 23, 1987, comply with the standards and requirements of the Atomic Energy Act of 1954, as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. 117 , 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

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: February 17, 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. 117
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 October 31, 1985, as superseded September 25, 1986 and May 22, 1987; and the application dated April 12, 1985, as revised September 9, 1985 and October 7, 1985, and superseded September 25, 1986, and May 22, 1987, and as supplemented October 23, 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. 117 , 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

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: February 17, 1988

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 117 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 117 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages	Insert Pages
TS 3.7-1	TS 3.7-1
TS 3.7-2	TS 3.7-2
TS 3.7-10	TS 3.7-10
TS 3.7-11	TS 3.7-11
TS 3.7-12	TS 3.7-12
TS 3.7-13	TS 3.7-13
--	TS 3.7-13a
--	TS 3.7-13b
--	TS 3.7-13c
--	TS 3.7-13d
TS 4.1-1	TS 4.1-1
TS 4.1-6	TS 4.1-6
TS 4.1-7	TS 4.1-7
TS 4.1-8	TS 4.1-8
TS 4.1-8a	TS 4.1-8a
TS 4.1-8b	TS 4.1-8b
TS 4.1-8c	TS 4.1-8c
--	TS 4.1-8d
TS 4.1-9	TS 4.1-9

3.7 INSTRUMENTATION SYSTEMS

Operational Safety Instrumentation

Applicability

Applies to reactor and safety features instrumentation systems.

Objectives

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

A. For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with TS Tables 3.7-1 through 3.7-3.

B.1 The reactor trip system instrumentation channels shall be operable as specified in TS Table 3.7-1.

B.2 In the event the number of channels of a particular subsystem in service falls below the limits given in the column entitled Minimum Operable Channels or Minimum Degree of Redundancy cannot be achieved, operation shall be limited according to the requirement shown in Column 4 of TS Tables 3.7-2 and 3.7-3.

C. In the event of subsystem instrumentation channel failure permitted by Specification 3.7.B2, Tables 3.7-2 and 3.7-3 need not be observed during the short period of time an operable subsystem channel is tested where the failed channel must be blocked to prevent unnecessary reactor trip.

D. The Engineered Safety Features initiation instrumentation setting limits shall be as stated in TS Table 3.7-4.

E. The radioactive liquid and gaseous effluent monitoring instrumentation channels shown in Table 3.7-5(a) and Table 3.7-5(b) shall be operable with their alarm/trip setpoints set to ensure that the limits of Specifications 3.11.A.1 and 3.11.B.1 are not exceeded. The alarm trip setpoints of these channels shall be determined and adjusted in accordance with the Offsite Dose Calculation Manual (ODCM).

1. With a radioactive liquid or gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, without delay suspend the release of radioactive liquid or gaseous effluents monitored by the affected channel and declare the channel inoperable or change the setpoint so it is acceptably conservative.

2. With less than the minimum number of radioactive liquid or gaseous effluent monitoring instrumentation channels operable, take the action shown in Table 3.7-5(a) or Table 3.7-5(b). Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

TABLE 3.7-1

REACTOR TRIP

INSTRUMENT OPERATING CONDITIONS

FUNCTIONAL UNIT	TOTAL NUMBER OF CHANNELS	MINIMUM OPERABLE CHANNELS	CHANNELS TO TRIP	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION
1. Manual	2	2	1		1
2. Nuclear Flux Power Range	4	3	2	Low trip setting at P-10	2
3. Nuclear Flux Intermediate Range	2	2	1	P-10	3
4. Nuclear Flux Source Range				P-6	
A. Below P-6 - Note A	2	2	1		4
B. Shutdown - Note B	2	1	0		5
5. Overtemperature ΔT	3	2	2		6
6. Overpower ΔT	3	2	2		6
7. Low Pressurizer Pressure	3	2	2	P-7	7
8. Hi Pressurizer Pressure	3	2	2		7

Note A - With the reactor trip breakers closed and the control rod drive system capable of rod withdrawal

Note B - With the reactor trip breakers open

TABLE 3.7-1

REACTOR TRIP

INSTRUMENT OPERATING CONDITIONS

FUNCTIONAL UNIT	TOTAL NUMBER OF CHANNELS	MINIMUM OPERABLE CHANNELS	CHANNELS TO TRIP	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION
9. Pressurizer-Hi Water Level	3	2	2	P-7	6
10. Low Flow	3/loop	2/loop in each operating loop	2/loop in any operating loop	P-8	6
			2/loop in any 2 operating loops	P-7	
11. Turbine Trip					
A. Stop valve closure	4	1	4	P-7	12
B. Low fluid oil pressure	3	2	2	P-7	6
12. Lo-Lo Steam Generator Water Level	3/loop	2/loop in each operating loop	2/loop in any operating loops		7
13. Underfrequency 4KV Bus	3-1/bus	2	2	P-7	6
14. Undervoltage 4KV Bus	3-1/bus	2	2	P-7	7
15. Safety Injection Input From ESF	2	2	1		8 A
16. Reactor Coolant Pump Breaker Position	1/breaker	1/breaker per operating loop	1 2	P-8 P-7	9 10

TABLE 3.7-1

REACTOR TRIP

INSTRUMENT OPERATING CONDITIONS

FUNCTIONAL UNIT	TOTAL NUMBER OF CHANNELS	MINIMUM OPERABLE CHANNELS	CHANNELS TO TRIP	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION
17. Low steam generator water level with steam/feedwater flow mismatch	2/loop-level and 2/loop-flow mismatch	1/loop-level and 2/loop flow mismatch or 2 loop/level and 1/loop-flow mismatch	1/loop level coincident with 1/loop-flow mismatch in same loop		7
18. A. Reactor Trip Breakers	2	2	1		8
B. Reactor Trip Bypass Breakers - Note C	2	1	1		
19. Automatic Trip Logic	2	2	1		11

Note C - With the Reactor Trip Breaker open for surveillance testing in accordance with Specification Table 4.1-1 (item 30)

PERMISSIBLE BYPASS CONDITIONS - P-6, P-7, P-8 and P-10 are defined in TS Table 4.1-A

TABLE 3.7-1 (Continued)

TABLE NOTATION

ACTION STATEMENTS

ACTION 1. With the number of channels OPERABLE, one less than required by the minimum OPERABLE Channels requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT SHUTDOWN within the next 6 hours and/or open the reactor trip breakers.

ACTION 2.A. With the number of OPERABLE channels equal to the Minimum OPERABLE Channels, POWER OPERATION may proceed provided the following conditions are satisfied:

1. The inoperable channel is placed in the tripped condition within 6 hours.
2. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of the redundant channel(s) per Specification 4.1.
3. Either, THERMAL POWER is restricted to ≤75% of RATED POWER and the Power Range, Neutron Flux trip setpoint is reduced to ≤85% of RATED POWER within 4 hours; or, the QUADRANT POWER TILT is monitored at least once per 12 hours.

TABLE 3.7-1 (Continued)

4. The QUADRANT POWER TILT shall be determined to be within the limit when above 75 percent of RATED POWER with one Power Range Channel inoperable by using the moveable incore detectors to confirm that the normalized symmetric power distribution, obtained from 2 sets of 4 symmetric thimble locations or a full-core flux map, is consistent with the indicated QUADRANT POWER TILT at least once per 12 hours.

2.B. With the number of operable channels one less than required by the Minimum Operable channels requirement, be in Hot Shutdown within 6 hours.

ACTION 3. With the number of channels OPERABLE one less than required by the Minimum OPERABLE Channels requirement and with the THERMAL POWER level:

a. Below P-6, (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 Setpoint.

b. Above P-6, (Block of Source Range Reactor Trip) setpoint, but below 10% of RATED POWER, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above 10% of RATED POWER.

c. Above 10% of RATED POWER, POWER OPERATION may continue.

TABLE 3.7-1 (Continued)

ACTION 4. With the number of channels OPERABLE one less than required by the Minimum OPERABLE Channels requirement and with the THERMAL POWER level:

a. Below P-6, (Block of Source Range Reactor Trip) setpoint, restore the inoperable channel to OPERABLE status prior to increasing THERMAL POWER above the P-6 setpoint.

b. Above P-6, operation may continue.

ACTION 5. With the number of channels OPERABLE one less than required by the Minimum OPERABLE Channels requirement, verify compliance with the SHUTDOWN MARGIN requirements within 1 hour and at least once per 12 hours thereafter.

ACTION 6.A. With the number of OPERABLE Channels equal to the Minimum Operable Channels, POWER OPERATION may proceed provided the following conditions are satisfied:

1. The inoperable channel is placed in the tripped condition within 6 hours.

2. The Minimum OPERABLE Channels requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.1.

6.B. With the number of OPERABLE Channels one less than required by the Minimum Operable Channels requirement, be in Hot Shutdown within 6 hours.

TABLE 3.7-1 (Continued)

ACTION 7.A. With the number of OPERABLE Channels equal to the Minimum Operable Channels, POWER OPERATION may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable channel is placed in the tripped condition within 6 hour.

7.B. With the number of OPERABLE Channels one less than required by the Minimum Operable Channels requirement, be in Hot Shutdown within 6 hours.

ACTION 8.A. With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT SHUTDOWN within the next 6 hours. In conditions of operation other than REACTOR CRITICAL or POWER OPERATIONS, with the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour. However, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.1. provided the other channel is OPERABLE.

ACTION 8.B. With one of the diverse trip features (undervoltage or shunt trip device) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and apply Action 8.A. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.

TABLE 3.7-1 (Continued)

ACTION 9. With one channel inoperable, restore the inoperable channel to OPERABLE status within 6 hours or reduce THERMAL POWER to below the P-8, (Block of Low Reactor Coolant Pump Flow and Reactor Coolant Pump Breaker Position) setpoint, within the next 2 hours. Operation below P-8 may continue pursuant to ACTION 10.

ACTION 10. With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 6 hours.

ACTION 11. With the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT SHUTDOWN within the next 8 hours. In conditions of operation other than REACTOR CRITICAL or POWER OPERATIONS, with the number of OPERABLE Channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour. However, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.1. provided the other channel is OPERABLE.

ACTION 12. With the number of OPERABLE channels less than the total number of channels, operation may continue provided the inoperable channels are placed in the tripped condition within 6 hours.

4.1 OPERATIONAL SAFETY REVIEW

Applicability

Applies to items directly related to safety limits and limiting conditions for operation.

Objective

To specify the minimum frequency and type of surveillance to be applied to unit equipment and conditions.

Specification

A.1 Calibration, testing, and checking of instrumentation channels shall be performed as detailed in Table 4.1-1 and 4.1-2.

A.2 The logic for the reactor trip system interlocks listed in Table 4.1-A shall be demonstrated operable prior to each reactor startup unless performed during the preceeding 92 days. The interlock function shall be demonstrated operable at each refueling by channel calibration testing of each channel affected by interlock operation.

B. Equipment tests shall be conducted as detailed below and in Table 4.1-2A.

1. Each Pressurizer PORV shall be demonstrated operable:
   a. At least once per 31 days by performance of a channel functional test, excluding valve operation, and
   b. At least once per 18 months by performance of a channel calibration.
2. Each Pressurizer PORV block valve shall be demonstrated operable at least once per 92 days by operating the valve through one complete cycle of full travel.

TABLE 4.1-1

MINIMUM FREQUENCIES FOR CHECK, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

Channel Description	Check	Calibrate	Test	Remarks
1. Nuclear Power Range	S	D(1) Q(3) R(4)	M(2)	1) Against a heat balance standard 2) Signal at ΔT; bistable action (permissive, rod stop, trip) 3) Upper and lower chambers for symmetric offset by means of the movable incore detector system 4) Neutron detectors may be excluded from Channel Calibration
2. Nuclear Intermediate Range (below P-10 setpoint)	*S	R(2)	P(1)	1) Log level; bistable action (permissive, rod stop, trip) 2) Neutron detectors may be excluded from Channel Calibration
3. Nuclear Source Range (below P-6 setpoint)	*S	R(2)	P(1)	1) Bistable action (alarm, trip) 2) Neutron detectors may be excluded from Channel Calibration
4. Reactor Coolant Temperature	*S	R	M(1) M(2)	1) Overtemperature ΔT 2) Overpower ΔT
5. Reactor Coolant Flow	S	R	M	
6. Pressurizer Water Level	S	R	M	
7. Pressurizer Pressure (High & Low)	S	R	M	
8. 4 kV Voltage and Frequency	N.A.	R	M	
9. Analog Rod Position	*S(1,2) (4)	R	M(3)	1) With step counters 2) Each six inches of rod motion when data logger is out of service 3) Rod bottom bistable action 4) N.A. when reactor is in cold shutdown.

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECK, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

	Channel Description	Check	Calibrate	Test	Remarks
10.	Rod Position Bank Counters	S(1,2)	N.A.	N.A.	1) Each six inches of rod motion when data logger is out of service 2) With analog rod position
11.	Steam Generator Level	S	R	M	
12.	Charging Flow	N.A.	R	N.A.	
13.	Residual Heat Removal Pump Flow	N.A.	R	N.A.	
14.	Boric Acid Tank Level	*D	R	N.A.	
15.	Refueling Water Storage Tank Level	S	R	M	
16.	Volume Control Tank Level	N.A.	R	N.A.	
17.	Reactor Containment Pressure-CLS	*D	R	M(1)	1) Isolation valve signal and spray signal.
18.	Boric Acid Control	N.A.	R	N.A.	
19.	Containment Sump Level	N.A.	R	N.A.	
20.	Accumulator Level and Pressure	S	R	N.A.	
21.	Containment Pressure-Vacuum Pump System	S	R	N.A.	
22.	Steam Line Pressure	S	R	M	

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECK, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

Channel Description	Check	Calibrate	Test	Remarks
23. Turbine First Stage Pressure	S	R	M	
24. Emergency Plan Radiation Instr.	*M	R	M	
25. Environmental Radiation Monitors	*M	N.A.	N.A.	TLD Dosimeters
26. Logic Channel Testing	N.A.	N.A.	M	
27. Turbine Overspeed Protection Trip Channel (Electrical)	N.A.	R	R	
28. Turbine Trip				Setpoint verification is not applicable
A. Stop valve closure	N.A.	N.A.	P	
B. Low fluid oil pressure	N.A.	N.A.	P	
29. Seismic Instrumentation	M	R	M	
30. Reactor Trip Breaker	N.A.	N.A.	M	The test shall independently verify operability of the undervoltage and shunt trip attachments
31. Reactor Coolant Pressure (Low)	N.A.	R	N.A.	
32. Auxiliary Feedwater				
a. Steam Generator Water Level Low-Low	S	R	M	
b. RCP Undervoltage	S	R	M	
c. S.I.	(All Safety Injection surveillance requirements)			
d. Station Blackout	N.A.	R	N.A.	
e. Main Feedwater Pump Trip	N.A.	N.A.	R	

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECK, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

Channel Description	Check	Calibrate	Test	Remarks
33. Loss of Power				
a. 4.16 KV Emergency Bus Under-voltage (Loss of Voltage)	N.A.	R	M	
b. 4.16 KV Emergency Bus Under-voltage (Degraded Voltage)	N.A.	R	M	
34. Control Room Chlorine Detectors	S	R	M	
35. Manual Reactor Trip	N.A.	N.A.	R	The test shall independently verify the operability of the undervoltage and shunt trip attachments for the manual reactor trip function. The test shall also verify the operability of the bypass breaker trip circuit.
36. Reactor Trip Bypass Breaker	N.A.	N.A.	M(1), R(2)	(1) Local manual undervoltage trip prior to placing breaker in service. (2) Automatic shunt trip.
37. Safety Injection Input from ESF	N.A.	N.A.	R	
38. Reactor Coolant Pump Breaker Position Trip	N.A.	N.A.	R	
39. Steam/Feedwater Flow and low S/G Water Level	S	R	M	

S - Each shift
D - Daily
N.A.- Not Applicable
Q - Every 90 effective full power days
M - Monthly
P - Prior to each startup if not done within the previous week
R - Each Refueling Shutdown

* See Specification 4.1.D

TABLE 4.1-A

REACTOR TRIP SYSTEM INTERLOCKS

DESIGNATION	CONDITION	FUNCTION
P-6	1 of 2 Intermediate range above setpoint (increasing power level)	Allows manual block of source range reactor trip
	2 of 2 Intermediate range below setpoint (decreasing power level)	Automatically defeats the block of source range reactor trip
P-10	2 of 4 Power range above setpoint (increasing power level)	Allows manual block of power range (low setpoint) and intermediate range reactor trips and intermediate range rod stop. Automatically blocks source range reactor trip.
	3 of 4 Power range below setpoint (decreasing power level)	Automatically defeats the block of power range (low setpoint) and intermediate range reactor trips and intermediate range rod stop.
		Input to P-7.
P-7	2 of 4 Power range above setpoint or 1 of 2 Turbine Impulse chamber above setpoint (Power level increasing)	Allows reactor trip on: Low flow or reactor coolant pump breakers open in more than one loop, Undervoltage (RCP busses), Underfrequency (RCP busses), Turbine Trip, Pressurizer low pressure, and Pressurizer high level.
	3 of 4 Power range below setpoint and 2 of 2 Turbine Impulse chamber pressure below setpoint (Power level decreasing)	Prevents reactor trip on: Low flow or reactor coolant pump breakers open in more than one loop, Undervoltage (RCP busses), Underfrequency (RCP busses), Turbine Trip, Pressurizer low pressure, and Pressurizer high level
P-8	2 of 4 Power range above setpoint (Power level increasing)	Permit reactor trip on low flow or reactor coolant pump breaker open in a single loop.
	3 of 4 Power range below setpoint (Power level decreasing)	Blocks reactor trip on low flow or reactor coolant pump breaker open in a single loop.

TABLE 4.1-1A

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL DESCRIPTION	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
(a) Liquid Radwaste Effluent Line	D	PR	R	Q
2. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE				
(a) Circulating Water Discharge Line	D	M	R	Q
(b) Component Cooling Service Water System Effluent Line	D	M	R	Q
3. FLOW RATE MEASUREMENT DEVICES				
(a) Liquid Radwaste Effluent Line	D	N.A.	R	N.A.

D - Daily
M - Monthly
R - Each Refueling Shutdown
Q - Quarterly
PR - Prior to each release
N.A. - Not Applicable

TABLE 4.1-1B

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL DESCRIPTION	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. PROCESS VENT SYSTEM				
(a) Noble Gas Activity Monitor Providing Alarm and Automatic Termination of Release	D	M*	R	Q
(b) Iodine Sampler	W	N.A	N.A	N.A.
(c) Particulate Sampler	W	N.A.	N.A	N.A.
(d) Process Vent Flow Rate Monitor	D	N.A.	R	N.A.
(e) Sampler Flow Rate Measuring Device	D	N.A.	SA	N.A.
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM				
(a) Hydrogen Monitor	D	N.A.	Q(1)	M
(b) Oxygen Monitor	D	N.A.	Q(2)	M
3. CONDENSER AIR EJECTOR SYSTEM				
(a) Gross Activity Monitor	D	M	R	Q
(b) Air Ejector Flow Rate Measuring Device	D	N.A.	R	N.A.
4. VENTILATION VENT SYSTEM				
(a) Noble Gas Activity Monitor	D	M	R	Q
(b) Iodine Sampler	W	N.A.	N.A.	N.A.
(c) Particulate Sampler	W	N.A.	N.A.	N.A.
(d) Ventilation Vent Flow Rate Monitor	D	N.A.	R	N.A.
(e) Sampler Flow Rate Measuring Device	D	N.A.	SA	N.A.

(1) - The channel calibration shall include the use of standard gas samples containing a nominal:
1. one volume percent hydrogen, balance nitrogen, and
2. four volume percent hydrogen, balance nitrogen.

(2) - The channel calibration shall include the use of standard gas samples containing a nominal:
1. one volume percent oxygen, balance nitrogen, and
2. four volume percent oxygen, balance nitrogen.

D - Daily
W - Weekly
M - Monthly
R - Each Refueling Shutdown
SA - Semi-annually
NA - Not Applicable
Q - Quarterly
* - Monthly and prior to each Waste Gas Decay Tank Release

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 117 TO FACILITY OPERATING LICENSE NO. DPR-32

AND AMENDMENT NO. 117 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

By letter dated October 31, 1985, as superseded by letters dated September 25, 1986, and May 22, 1987, Virginia Electric and Power Company (the licensee) requested various changes to Section 3.7, "Instrumentation Systems," and Section 4.1, "Operational Safety Review," of the Surry Units 1 and 2 Technical Specifications. These changes included editorial changes intended to clarify the Technical Specifications and to ensure agreement with the actual installed instrumentation. Some changes were requested to add conservatism and to bring the Technical Specifications into closer agreement in some areas with the Westinghouse Standard Technical Specifications (NUREG-0452, Revision 4). Changes were also proposed to increase surveillance intervals and out-of-service times for reactor trip system analog instrument channels based on the Westinghouse Technical Specification Optimization Program set forth in WCAP-10271, "Evaluation of Surveillance Frequencies and Out-of-Service Times for the Reactor Protection Instrumentation System," and Supplement 1 thereto. Some portions of the above-mentioned WCAP have been approved by the staff in a Safety Evaluation (SE) issued by letter from Mr. C. O. Thomas (NRC) to Mr. J. J. Sheppard (Westinghouse Owners Group) dated February 21, 1985. Subsequent to the above evaluation, by letter from Mr. H. R. Denton to Mr. L. D. Butterfield dated July 24, 1985, the staff provided additional guidance to licensees for preparing plant-specific Technical Specification change requests. This guidance was provided to expedite the implementation of the changes approved by the staff in the above evaluation . The proposed changes by the licensee reflect the guidance provided by the staff.

Also, in response to Generic Letter 85-09, "Technical Specifications for Generic Letter 83-28, Item 4.3" dated May 23, 1985, the licensee proposed Technical Specifications for the reactor trip breakers, the reactor trip bypass breakers and the automatic trip logic for both Surry Units. These Technical Specifications were included in the May 22, 1987 submittal, which was supplemented by a letter dated October 23, 1987. These Technical Specifications were originally submitted by letter dated April 12, 1985 and revised by letters dated September 9, 1985 and October 7, 1985. The original submittal was noticed in the Federal Register on May 21, 1985 (50 FR 20995). Due to the revisions to the original submittal, the staff renoticed the proposed action again on December 18, 1985

(50 FR 51634). All of the above submittals were superseded by letter dated September 25, 1986, and again by a May 22, 1987 submittal. The May 22, 1987 letter, which supersedes all of the previous submittals discussed above, was renoticed in the Federal Register on September 23, 1987 (52 FR 35810).

EVALUATION

The licensee proposed the following editorial changes, which we find acceptable on the basis that they add clarity, brevity and conciseness to the Technical Specifications:

Change 1 - Specification 3.7.B is split into 3.7.B.1 and 3.7.B.2, with 3.7.B.1 covering reactor trip system instrumentation channels and 3.7.B.2 covering engineered safeguards action instrumentation and instrumentation operating conditions for isolation functions. This change results from the reformatting of Technical Specification Table 3.7-1 (see Change 22).

Change 2 - Specification 3.7.C is revised to exclude coverage of reactor trip system instrumentation channels. This change results from Change 1 and Change 22.

Change 3 - On page 3.7-11, Functional Unit 11, "Turbine Trip," is expanded to specifically include appropriate entries for "Stop valve closure" and "Low fluid oil pressure," as well as to add conciseness, and to be in agreement with the actual installed hardware. It should be noted that the entry under "OPERATOR ACTION" for "Stop valve closure" should be "12" in lieu of "11." The licensee has stated this was submitted as a typographical error.

Change 4 - Functional Unit 15, "Control Rod Misalignment Monitor," is deleted from Table 3.7-1 to reflect the fact that it is not part of the reactor trip system and is not assumed to operate in any plant accident analysis. The functional units in Table 3.7-1 following old Functional Unit 15 are renumbered as a result of this change and Change 19 below.

Change 5 - On page 3.7-10, Functional Unit 4, "Nuclear Flux Source Range," has been expanded to provide separate entries for modes with reactor trip breakers closed and modes with the breakers open. The entries were based on the guidance contained in Revision 4 to NUREG-0452.

Change 6 - On page 3.7-11 under Functional Units 10 and 12, entries under "MINIMUM OPERABLE CHANNELS" are changed from "2/operable loop" to "2/loop in each operating loop" following the guidance contained in Revision 4 to NUREG-0452.

Change 7 - On page 3.7-11, the functional unit for reactor trip on safety injection (old Functional Unit 16) has been revised and specific entries have been provided in lieu of the cross-reference to Table 3.7-2. The new entries are based on the guidance contained in Revision 4 to NUREG-0452.

Change 8 - The format of Table 3.7-1 has been changed to include columns entitled "TOTAL NUMBER OF CHANNELS" and "CHANNELS TO TRIP" with appropriate entries for each functional unit to reflect the installed hardware. Also, the column titled "DEGREE OF REDUNDANCY" and all its entries for each functional unit are no longer needed and are deleted.

Change 9 - In Table 4.1-1 under Functional Unit 8, the entry under the column titled "Check" is changed from "S" to "N.A." to reflect actual installed hardware and to follow the guidance contained in NUREG-0452, Revision 4.

Change 10 - In Table 4.1-1 under Functional Units 2 and 3, notes are added under "Channel Description" to limit surveillance only to those power levels where the channels are operable (not bypassed), which is consistent with the guidance of Revision 4 to NUREG-0452). The reference to note 1 in the entry under "Check" is no longer needed and is deleted.

Change 11 - In Table 4.1-1 under Functional Units 2 and 3, note 1 has been deleted (related to Change 10), note 2 is renumbered as note 1 under "Remarks," and the entries under "Test" now reference note 1.

Change 12 - Functional Unit 16 was deleted from Table 4.1-1 by Amendment 103. As a result, functional units following old Functional Unit 16 in Table 4.1-1 are now renumbered to reflect this deletion.

Change 13 - On page 4.1-8a, footnotes for "weekly," "semiannually," "every two weeks" and "after each startup if not done previous week" are deleted because they are no longer used in Table 4.1-1.

Change 14 - Page numbers for Table 4.1-1A and 4.1-1B have been renumbered as a result of Change 20.

Change 15 - The information on page 4.1-9 is deleted because it is now included on a previous page.

Change 16 - In Table 4.1-1 under new Functional Unit 28, the entries under "Calibrate" are changed from "R" to "N.A.." and the entry under "Remarks" is changed to "Setpoint verification is not applicable" to reflect the actual installed hardware and to follow the guidance contained in Revision 4 to NUREG-0452.

Change 17 - In Table 4.1-1 under Functional Unit 1, the entry "M(3)" under "Check" is deleted based on coverage provided by other surveillance requirements and the guidance of Revision 4 to NUREG-0452.

The licensee proposed the following changes which we find acceptable because they provide added conservatism to the Technical Specifications:

Change 18 - In Table 3.7-1, entries under "MINIMUM OPERABLE CHANNELS" are revised to "2" in lieu of "1" for Functional Units 1, 3, new 4A and new 17.

Change 19 - In Table 3.7-1, a new Functional Unit 16 with appropriate entries has been added covering reactor trip on reactor coolant pump breaker position.

Change 20 - Specification 4.1.A.2 is added to provide surveillance requirements for the reactor trip system interlocks. Also, Table 4.1-A is added to describe the interlocks which are part of the reactor trip system. In Table 3.7-1, the entries under "PERMISSIBLE BYPASS CONDITIONS" are revised to reference the specific, applicable interlock description via a new footnote added on page 3.7-12.

Change 21 - On page 4.1-8a, new Functional Units 37, "Safety Injection Input from ESF"; 38, "Reactor Coolant Pump Reactor Position Trip"; and 39, "Steam/Feedwater Flow and Low S/G Water Level," are added to Table 4.1-1 to provide surveillance requirements for these instrument channels. The surveillance intervals are based on the guidance of Revision 4 to NUREG-0452.

Change 22 - The format of Table 3.7-1 has been changed to include a column titled "OPERATOR ACTION" in lieu of "OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 EXCEPT AS CONDITIONED BY COLUMN 3 CANNOT BE MET." Specific numbered "Action Statements" based on the North Anna Power Station Unit 2 Technical Specifications and similar to those found in NUREG-0452, Revision 4 are being referenced in lieu of the current entries.

Change 23 - In Table 4.1-1 under Functional Unit 1, "R(4)" has been included under "Calibrate" and a new note 4 added under "Remarks" to exclude the neutron detectors from the channel calibration following the guidance of Revision 4 to NUREG-0452.

Change 24 - In Table 4.1-1 under Functional Units 2 and 3, "R(2)" has been included under "Calibrate" and a new note 2 added under "Remarks" to exclude the neutron detectors from the channel calibration following the guidance of Revision 4 to NUREG-0452.

Change 25 - In Table 4.1-1 under new Functional Unit 28, the entries under "Test" are changed from "R" to "P" following the guidance of NUREG-0452, Revision 4.

The licensee proposed the following changes based on the Westinghouse Technical Specification Optimization Program set forth in WCAP-10271 and Supplement 1 thereto. We find these changes acceptable on the basis set forth in the staff's February 21, 1985 SE for WCAP, and the guidance provided in the staff's July 24, 1985 letter.

Change 26 - In the new Action Statements 2.A.1, 6.A.1, 7.A, 9, 10, and 12, the time during which an inoperable reactor trip system analog channel may be maintained in an untripped condition is 6 hours. This has been increased above the 1 hour contained in the corresponding action statements in NUREG-0452, Revision 4.

Change 27 - In the new Action Statements 2.A.2 and 6.A.2, the time an inoperable reactor trip system analog channel may be bypassed to allow testing of another channel in the same function is 4 hours. This has been increased above the 2 hours contained in the corresponding action statements in NUREG-0452, Revision 4.

Change 28 - In Table 4.1-1 under Functional Units 1 and 4, the entries under "Test" are changed from "BW(2)" to "M(2)." Although this change was not specifically addressed in the staff's SE dated February 21, 1985, it is considered consistent with the staff's approval of surveillance interval increases from monthly to quarterly. Prior to the staff's SE approval, NUREG-0452, Revision 4, contained a monthly surveillance interval for this test.

The licensee proposed the following changes based on the recommendations of Generic Letter 85-09. Based on our evaluation of the proposed changes, we requested clarification for two action statements. By letter dated October 23, 1987, the licensee provided the clarification. We find these changes acceptable as they are consistent with the recommendations of Generic Letter 85-09.

Change 29 - In Table 3.7-1, the new Functional Units 18A (Reactor Trip Breakers), 18B (Reactor Trip Bypass Breakers) and 19 (Automatic Trip Logic) with appropriate entries, have been added per the guidance provided in Generic Letter 85-09. The proposed action statements are consistent with the recommendations of Generic Letter 85-09.

Change 30 - In Table 4.1-1, Functional Units 35 (Manual Reactor Trip) and 36 (Reactor Trip Bypass Breakers) have been added per the guidance provided in Generic Letter 85-09. In Functional Unit 30 (Reactor Trip Breaker), a note has been added to clarify that the test shall independently verify operability of the undervoltage and shunt trip attachments.

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. 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: February 17, 1988

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