

REGULATORY DOCKET FILE COPY

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23209

December 14, 1978

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Albert Schwencer, Chief
Operating Reactors Branch 1
Division of Reactor Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Serial No. 502A/082878
LQA/RMN:jab

Docket Nos. 50-280
50-281

License Nos. DPR-32
DPR-37

Dear Mr. Denton:

SUPPLEMENTAL INFORMATION AMENDMENT TO OPERATING LICENSE
SURRY POWER STATION UNITS NOS. 1 AND 2
PROPOSED TECHNICAL SPECIFICATION CHANGE NO. 72

By letter dated October 12, 1978 we requested a change to the Technical Specifications for Surry Power Station Unit Nos. 1 and 2 to ensure the operability of the overpressure protection system. Attached are improved proposed Technical Specifications to replace those submitted previously. The new changes set a reactor coolant system temperature limit of 350°F below which the system must be enabled. Less dependence is put on operator surveillance. Safety is enhanced even beyond our previous proposal. Since this is only a modification of our previously submitted proposed Technical Specification change number 72 no additional fees are required.

This proposed change has been reviewed and approved by the Station Nuclear Safety and Operating Committee, and the System Nuclear Safety and Operating Committee. It has been determined that this request does not involve an unreviewed safety question, as defined in 10 CFR 50.59.

Very truly yours,

C. M. Stallings

C. M. Stallings
Vice President-Power Station
and Production Operations

Attachment: Proposed Technical Specification

cc: Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
Region II

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COMMONWEALTH OF VIRGINIA)
) S. S.
CITY OF RICHMOND)

Before me, a Notary Public, in and for the City and Commonwealth aforesaid, today personally appeared C. M. Stallings, who being duly sworn, made oath and said (1) that he is Vice President-Power Supply and Production Operations, of the Virginia Electric and Power Company, (2) that he is duly authorized to execute and file the foregoing Amendment in behalf of that Company, and (3) that the statements in the Amendment are true to the best of his knowledge and belief.

Given under my hand and notarial seal this 14th day of December, 78.

My Commission expires My Commission Expires March 5, 1979.

Carolyn J. Greene
Notary Public

commissioned as
Carolyn J. White

(SEAL)

3.0 LIMITING CONDITIONS FOR OPERATION

3.1 REACTOR COOLANT SYSTEM

Applicability

Applies to the operating status of the Reactor Coolant System.

Objectives

To specify those limiting conditions for operation of the Reactor Coolant System which must be met to ensure safe reactor operation.

These conditions relate to: operational components, heatup and cooldown, leakage, reactor coolant activity, oxygen and chloride concentrations, minimum temperature for criticality, and reactor coolant system overpressure mitigation.

A. Operational Components

Specifications

1. Reactor Coolant Pumps

- a. A reactor shall not be brought critical with less than two pumps, in non-isolated loops, in operation.
- b. If an unscheduled loss of one or more reactor coolant pumps occurs while operating below 10% rated power (P-7) and results in less than two pumps in service, the affected

plant shall be shutdown and the reactor made subcritical by inserting all control banks into the core. The shutdown rods may remain withdrawn.

- c. A minimum of one pump in a non-isolated loop, or one residual heat removal pump and its associated flow path, shall be in operation during reactor coolant boron concentration reduction.
- d. Reactor power shall not exceed 50% of rated power with only two pumps in operation unless the overtemperature ΔT trip setpoints have been changed in accordance with Section 2.3, after which power shall not exceed 60% with the inactive loop stop valves open and 65% with the inactive loop stop valves closed.
- e. When all three pumps have been idle for > 15 minutes, the first pump shall not be started unless: (1) a bubble exists in the pressurizer or (2) the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.

2. Steam Generator

A minimum of two steam generators in non-isolated loops shall be operable when the average reactor coolant temperature is greater than 350°F.

3. Pressurizer Safety Valves

- a. One valve shall be operable whenever the head is on the reactor vessel, except during hydrostatic tests.

References

- (1) FSAR 4.2
- (2) FSAR 9.2

G. Reactor Coolant System Overpressure MitigationSpecification

1. The Reactor Coolant system overpressure mitigating system shall be operable as described below.
 - a. Whenever the reactor coolant average temperature is greater than 350°F, a bubble shall exist in the pressurizer with the necessary sprays and heaters operable.
 - b. Whenever the reactor coolant average temperature is $\leq 350^{\circ}\text{F}$ and the reactor vessel head is bolted:
 - (1) A maximum of one charging pump operable.
 - (2) Two charging pumps shall be demonstrated inoperable at least once per 12 hours by verifying the motor circuit breakers have been removed from their power supply or the benchboard control switch is in the "PULL-TO-LOCK" position.
 - (3) Two operable Power Operated Relief Valves (PORV) with a lift setting of ≤ 435 psig, or
 - (4) A bubble in the pressurizer with a maximum pressurizer narrow range level of 33%. After a period of 72 hours, two PORV's must also be operable; or
 - (5) The Reactor Coolant system vented through one opened PORV, or an equivalent size opening.
2. The requirements of Specification 3.1.G.1.b may be modified as follows:
 - a. One PORV may be inoperable for a period not to exceed 7 days. If the inoperable PORV is not restored to operable status within 7 days, then depressurize the RCS and open one PORV within the next 8 hours.

- b. With both PORV's inoperable, depressurize the RCS within 8 hours unless specification 3.1.G.1.b.(4) is in effect. When the RCS has been depressurized, open one PORV or establish the conditions listed below. Maintain the RCS depressurized until both PORV's have been restored to operable status.
- (1) A maximum Pressurizer narrow range level of 33%.
 - (2) The series RHR inlet valves opened and their respective breakers locked open or an alternate letdown path operable.
 - (3) Limit charging flow to less than 150 gpm.
 - (4) Safety Injection accumulator discharge valves closed and their respective breakers locked open.
- c. When the conditions noted in 3.1.G.2.b.(1) through 3.1.G.2.b.(4) above are required to be established, their implementation shall be verified at least once per 12 hours.
3. In the event that the Reactor Coolant System Overpressure Mitigating System is used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.6.4 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the Mitigating system or the administrative controls on the transient and any corrective actions necessary to prevent recurrence.

Basis

The operability of two PORV's or the RCS vented through an opened PORV ensures that the Reactor Vessel will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when the Reactor Coolant average temperature is $\leq 350^{\circ}\text{F}$ and the Reactor Vessel Head bolted. When the Reactor Coolant average temperature is $> 350^{\circ}\text{F}$ overpressure protection is provided by a bubble in the pressurizer and/or pressurizer safety valves. A single PORV has adequate relieving

TABLE 4.1-1 (Continued)

	<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
25.	Turbine First Stage Pressure	S	R	M	
26.	Emergency Plan Radiation Instruments	*M	R	M	
27.	Environmental Radiation Monitors	*M	N.A.	N.A.	TLD Dosimeters
28.	Logic Channel Testing	N.A.	N.A.	M	
29.	Turbine Overspeed Protection Trip Channel (Electrical)	N.A.	R	R	
30.	Turbine Trip Set Point	N.A.	R	R	Stop valve closure or low EH fluid pressure
31.	Seismic Instrumentation	M	SA	M	
32.	Reactor Trip Breaker	N.A.	N.A.	M	
33.	Reactor Coolant Pressure (Low)	N.A.	R	N.A.	

S - Each Shift

M - Monthly

D - Daily

P - Prior to each startup if not done previous week

W - Weekly

R - Each Refueling Shutdown

NA - Not applicable

BW - Every two weeks

SA - Semiannually

AP - After each startup if not done previous week

Q - Every 90 effective full power days

* See Specification 4.1D

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

The limitation for a maximum of one charging pump allowed operable and the surveillance required to verify that two charging pumps to be inoperable below 350°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV, or equivalent.

A maximum Pressurizer narrow range level of 33% has been selected to provide sufficient time, approximately 10 minutes, for operator response in case of a malfunction resulting in maximum charging flow from one charging pump (600 gpm). Operator action would be initiated by at least two alarms that would occur between the normal operating level and the maximum allowable level (33%). When both PORV are inoperable and it is impossible to manually open at least one PORV, additional administrative controls shall be implemented to prevent a pressure transient that would exceed the limits of Appendix G to 10 CFR Part 50.

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

TABLE 4.1.2A (CONTINUED)

<u>DESCRIPTION</u>	<u>TEST</u>	<u>FREQUENCY</u>	<u>FSAR SECTION REFERENCE</u>
16. Reactor Vessel Overpressure Mitigating System (except backup air supply)	Functional & Setpoint	Prior to decreasing RCS temperature below 350°F and monthly while the RCS is <350°F and the Reactor Vessel Head is bolted.	None
17. Reactor Vessel Overpressure Mitigating System Backup Air Supply	Setpoint	Refueling	None

- c. With no fire suppression water system operable, within 24 hours; notify the Commission outlining the action taken and the plans and schedule for restoring the system to operable status.
- d. With redundant fire suppression water system component inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the component to operable status.
- e. With the CO₂ fire protection system inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the system to operable status.
- f. With the Records Vault halon fire protection system inoperable for more than 14 days, submit a Special Report to the Commission within the next 10 days outlining the cause of inoperability and the plans for restoring the system to operable status.
- g. In the event that the Reactor Vessel Overpressure Mitigating System is used to mitigate a RCS pressure transient, submit a Special Report to the Commission within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or the administrative controls on the transient and any corrective action necessary to prevent recurrence.