SEPTEMBER, 6 1979

Docket Nos. 50-280
and 50-281

REGULATORY DOCKET FILE COPY

Mr. W. L. Proffitt
Senior Vice President - Power
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Proffitt:

The Commission has issued the enclosed Amendment Nos. 52 and 51 to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated August 8, 1979.

The amendments revise the Technical Specifications to require actuation of safety injection based on two out of three channels of low pressurizer pressure.

Copies of the related Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment Nos. 52 and 51 to DPR-32 and DPR-37
2. Safety Evaluation
3. Notice of Issuance

cc: w/enclosures
See next page

ccp

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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. 52
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 August 8, 1979, 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 the 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 Appendices A and B, as revised through Amendment No. 52 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective no later than return to power from the next cold shutdown.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: September 6, 1979

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. 51
License No. DPR-37

1. The Nuclear Regulator Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company (the licensee) dated August 8, 1979, 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 the license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 51, 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

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: September 6, 1979

ATTACHMENT TO LICENSE AMENDMENT NOS. 52 AND 51

FACILITY OPERATING LICENSE NOS. DPR-32 AND DPR-37

DOCKET NOS. 50-280 AND 50-281

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove	Insert
3.7-4	3.7-4
3.7-6	3.7-6
3.7-11	3.7-11
3.7-13	3.7-13

to generator signals actuating the SIS active phase. The SIS active phase is also actuated by a high containment pressure signal brought about by loss of high enthalpy coolant to the containment. This actuation signal acts as a backup to the low pressurizer pressure actuation of the SIS and also adds diversity to protection against loss of coolant.

Signals are also provided to actuate the SIS upon sensing the effects of a steam line break accident. Therefore, SIS actuation following a steam line break is designed to occur upon sensing high differential steam pressure between the steam header and steam generator line or upon sensing high steam line flow in coincidence with low reactor coolant average temperature or low steam line pressure.

The increase in the extraction of RCS heat following a steam line break results in reactor coolant temperature and pressure reduction. For this reason protection against a steam line break accident is also provided by low pressurizer pressure actuating safety injection.

Protection is also provided for a steam line break in the containment by actuation of SIS upon sensing high containment pressure.

SIS actuation injects highly borated fluid into the Reactor Coolant System in order to counter the reactivity insertion brought about by cooldown of the reactor coolant which occurs during a steam line break accident.

in order to prevent excessive cooldown of the reactor coolant system. This mitigates the effect of an accident such as steam break which in itself causes excessive coolant temperature cooldown.

Feedwater line isolation also reduces the consequences of a steam line break inside the containment, by stopping the entry of feedwater.

Setting Limits

1. The high containment pressure limit is set at about 10% of design containment pressure. Initiation of Safety Injection protects against loss of coolant (2) or steam line break (3) accidents as discussed in the safety analysis.

2. The high-high containment pressure limit is set at about 50% of design containment pressure. Initiation of Containment Spray and Steam Line Isolation protects against large loss of coolant (2) or steam line break accidents (3) as discussed in the safety analysis.

3. The pressurizer low pressure setpoint for safety injection actuation is set substantially below system operating pressure limits. However, it is sufficiently high to protect against a loss-of-coolant accident as shown in the safety analysis.(2)

4. The steam line high differential pressure limit is set well below

TABLE 3.7-2

ENGINEERED SAFEGUARDS ACTION

FUNCTIONAL UNIT	1 MIN. OPERABLE CHANNELS	2 MIN. DEGREE OF REDUNDANCY	3 PERMISSIBLE BYPASS CONDITIONS	4 OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 EXCEPT AS CONDITIONED BY COLUMN 3 CANNOT BE MET
1 SAFETY INJECTION				
a. Manual	1	0		Cold Shutdown
b. High Containment Pressure (Hi Setpoint)	3	1		Cold Shutdown
c. High Differential Pressure between any Steam Line and the Steam Line Header	2/non-isolated loop	1/non-isolated loop		Cold Shutdown
d. Pressurizer Low Low Pressure	2	1	Primary Pressure less than 2000 psig except when reactor is critical	Cold Shutdown
e. High Steam Flow in 2/3 Steam Lines with Low T_{avg} or Low Steam Line Pressure	1/steamline 2 T_{avg} signals 2 Steam Pressure Signals	*** 1 1	Reactor Coolant average temperature less than 547°F during heatup and cooldown.	Cold Shutdown
2 CONTAINMENT SPRAY				
a. Manual	2	**		Cold Shutdown
b. High Containment Pressure (Hi Hi Setpoint)	3	1		Cold Shutdown

** - Must actuate 2 switches simultaneously

*** - With the specified minimum operable channels the 2/3 high steam flow is already in the trip mode

TABLE 3.7-4

ENGINEERED SAFETY FEATURE SYSTEM INITIATION LIMITS INSTRUMENT SETTING

NO.	FUNCTIONAL UNIT	CHANNEL ACTION	SETTING LIMIT
1	High Containment Pressure (High Containment Pressure Signal)	a) Safety Injection b) Containment Vacuum Pump Trip c) High Pressure Containment Isolation d) Safety Injection Containment Isolation e) F.W. Line Isolation	≤5 psig
2	High High Containment Pressure (High High Containment Pressure Signal)	a) Containment Spray b) Recirculation Spray c) Steam Line Isolation d) High High Pressure Containment Isolation	≤25 psig
3	Pressurizer Low Low Pressure	a) Safety Injection b) Safety Injection Containment Isolation c) Feedwater Line Isolation	≥1,700 psig
4	High Differential Pressure Between Steam Line and the Steam Line Header	a) Safety Injection b) Safety Injection Containment Isolation c) F.W. Line Isolation	≤150 psi
5	High Steam Flow in 2/3 Steam Lines	a) Safety Injection	≤40% (at zero load) of full steam flow ≤40% (at 20% load) of full steam flow
		b) Steam Line Isolation	≤110% (at full load) of full steam flow
		c) Safety Injection Containment Isolation	
		d) F.W. Line Isolation	
	Coincident with Low T_{avg} or Low Steam Line Pressure		≥541°F T_{avg} ≥500 psig steam line pressure

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 52 AND 51 TO

FACILITY OPERATING LICENSE NOS. DPR-32 AND 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 August 8, 1979, Virginia Electric and Power Company (the licensee) proposed modifications to the safety injection actuation system logic for Surry Power Station Unit Nos. 1 and 2 in response to Item 3 of IE Bulletin 79-06A dated April 14, 1979. These modifications will require two out of three channels of low pressurizer pressure for actuation.

Discussion and Evaluation

Since the date of licensing until the issuance of IE Bulletin 79-06A, safety injection was initiated, in addition to other parameters, based on coincident trip of one-of-three matched pairs of low pressurizer level and low pressurizer pressure trips. Item 3 of IE Bulletin 79-06A directed all facilities using pressurizer water level coincident with pressurizer pressure for automatic initiating of safety injection to trip the low pressurizer level setpoint bistables so that when pressurizer pressure reaches the low setpoint, safety injection would be initiated regardless of the pressurizer level.

Because of the concern that this action has resulted in placing Surry Units 1 and 2 in a condition (one-out-of-three trip) which is more susceptible to spurious actuation of the safety injection system, the licensee has proposed modifications and related Technical Specification changes to alleviate this situation.

The proposed modifications to the safety injection actuation system consist of removing the pressurizer level signal from each of the pressurizer lever pressure channel trips and converting the system to a two-out-of-three logic based on the pressurizer low pressure trips. The instrumentation logic receives pressurizer pressure signals from three pressure transmitters and initiates a safety injection actuation when two of the three signals reach the low pressure set-point of 1,700 psig. These modifications do not involve a change in the setpoint. These modifications will satisfy the requirements of IEEE 279-1971, and other applicable standards. The modifications will be implemented during the current outage on Unit 2 and at the next cold shutdown for Unit 1.

Based on our review of the licensee's submittal, we conclude that the modifications to the safety injection actuation system logic satisfy the requirements of IEEE 279-1971 and that the changes in Technical Specifications are correct, and therefore, are acceptable.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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.

Date: September 6, 1979

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC AND POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY

OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 52 and 51 to Facility Operating License Nos. DPR-32 and DPR-37 issued to Virginia Electric and Power Company, which revised Technical Specifications for operation of the Surry Power Station, Unit Nos. 1 and 2 (the facility) located in Surry County, Virginia. The amendment to DPR-32 is effective no later than return to power from the next cold shutdown, and the amendment to DPR-37 is effective as the date of issuance.

These amendments revise the Technical Specifications to require the initiation of safety injection on the trip of two-out-of-three, rather than on the coincident trip of one-out-of-three channels of low pressurizer pressure and one-out-of-three channels of low pressurizer level. This change eliminates reliance on pressurizer level for actuation of the safety injection system and reduces the liklihood of actuation of the safety injection system by spurious signals.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendment dated August 8, 1979, (2) Amendment Nos. 52 and 51 to License Nos. DPR-32 and DPR-37, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and the Swem Library, College of William and Mary, Williamsburg, Virginia. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 6th day of September, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors