

AUG 7 1975

Docket Nos. 50-280  
and 50-281

Virginia Electric & Power Company  
ATTN: Mr. Stanley Ragone  
Senior Vice President  
Post Office Box 26666  
Richmond, Virginia 23261

Gentlemen:

The Commission has issued the enclosed Amendments No. 9 to Facility Operating Licenses No. DPR-32 and DPR-37 for the Surry Power Station, Units 1 and 2. The amendments include Change No. 24 to the Technical Specifications for each license and are in response to your request dated July 5, 1974, as supplemented November 13, 1974, April 11 and July 10, 1975.

The amendments revise the provisions in the Technical Specifications relating to the high steam flow set points.

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

Sincerely,

Original signed by:  
Robert A. Purple

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Reactor Licensing

*RAP*  
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Enclosures:

1. Amendment No. 9 to DPR-32
2. Amendment No. 9 to DPR-37
3. Safety Evaluation
4. Federal Register Notice

cc: See next page

*ZRR 8/5/75*

<i>one</i> <i>7/29/75</i>	RL:ORB#1 <i>MBJ</i>	TR:RSB <i>[Signature]</i>	OELD <i>[Signature]</i>	RL:ORB#1 <i>[Signature]</i>
SURNAME →	MFairtile:lb	TNovak	F.S. Gray	RAPurple
DATE →	<i>31</i> 7/29/75	8/5/75	8/7/75	8/7/75

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cc w/enclosures:

Michael W. Maupin, Esquire  
Hunton, Williams, Gay & Gibson  
P. O. Box 1535  
Richmond, Virginia 23213

Swem Library  
College of William & Mary  
Williamsburg, Virginia 23185

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

cc w/enclosures & incoming:  
Ms. Susan T. Wilburn  
Commonwealth of Virginia  
Council on the Environment  
P. O. Box 790  
Richmond, Virginia 23206

Mr. Robert Blanco  
Environmental Protection Agency  
Curtis Building  
6th and Walnut Street  
Philadelphia, Pennsylvania 19106

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 9  
License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Virginia Electric & Power Company (the licensee) dated July 5, 1974, as supplemented November 13, 1974, April 11 and July 10, 1975, 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; and
  - 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License No. DPR-32 is hereby amended to read as follows:

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**"3.B Technical Specifications**

The Technical Specifications contained in Appendix A, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 24."

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:  
Robert A. Purple

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Reactor Licensing

Attachment:  
Change No. 24 to the  
Technical Specifications

Date of Issuance: AUG 7 1975

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ATTACHMENT TO LICENSE AMENDMENT NO. 9

CHANGE NO. 24 TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-32

DOCKET NO. 50-280

Revise Appendix A as follows:

1. Remove pages 3.7-7 and 3.7-13.
2. Insert revised pages 3.7-7 and 3.7-13.

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the differential pressure expected in the event of a large steam line break accident as shown in the safety analysis. (3)

5. The high steam line flow differential pressure setpoint is constant at 40% full flow between no load and 20% load and increasing linearly to 110% of full flow at full load in order to protect against large steam line break accidents. The coincident low  $T_{avg}$  setting limit for SIS and steam line isolation initiation is set below its hot shutdown value. The coincident steam line pressure setting limit is set below the full load operating pressure. The safety analysis shows that these settings provide protection in the event of a large steam line break. (3)

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#### Automatic Functions Operated from Radiation Monitors

The Process Radiation Monitoring System continuously monitors selected lines containing or possibly containing, radioactive effluent. Certain channels in this system actuate control valves on a high-activity alarm signal. Additional information on the Process Radiation Monitoring System is available in the FSAR. (4)

#### Reference

- (1) FSAR - Section 7.5
- (2) FSAR - Section 14.5
- (3) FSAR - Section 14.3.2
- (4) FSAR - Section 11.3.3

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TABLE 3.7-4

ENGINEERED SAFETY FEATURE SYSTEM INITIATION LIMITS INSTRUMENT SETTING

<u>NO.</u>	<u>FUNCTIONAL UNIT</u>	<u>CHANNEL ACTION</u>	<u>SETTING LIMIT</u>
1	High Containment Pressure (High Containment Pressure Signal)	a) Safety Injection b) Containment Vacuum Pump Trip c) High Pressure Containment Isolation d) Safety Inejction 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 Pressure and Low Level	a) Safety Injection b) Safety Injection Containment Isolation c) Feedwater Line Isolation	≥ 1,700 psig ≥ 5 percent instrument span
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  b) Steam Line Isolation c) Safety Injection Containment Isolation d) F.W. Line Isolation	≤ 40% (at zero load) of full steam flow ≤ 40% (at 20% load) of full steam flow  ≤ 110% (at full load) of full steam flow
	Coincident with Low $T_{avg}$ or Low Steam Line Pressure		≥ 541°F $T_{avg}$ ≥ 500 psig steam line pressure

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**SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION**  
**SUPPORTING AMENDMENTS NO. 9 TO LICENSES NOS. DPR-32 AND DPR-37**

**CHANGE NO. 24 TO TECHNICAL SPECIFICATIONS**

**VIRGINIA ELECTRIC AND POWER COMPANY**

**SURRY POWER STATION, UNITS 1 AND 2**

**DOCKET NOS. 50-280 AND 50-281**

**Introduction**

By letter dated July 5, 1974, and supplemented by letters dated November 13, 1974, April 11 and July 10, 1975, Virginia Electric and Power Company (the licensee) requested changes to the Technical Specifications appended to Facility Operating Licenses DPR-32 and DPR-37 for the Surry Power Station Units 1 and 2. The purpose of the request is to revise the Technical Specifications as required to change the high steam flow setpoint from a linear function of  $\Delta P$  between the  $\Delta P$  equivalent to 20% steam flow at zero load and the  $\Delta P$  equivalent to 120% steam flow at 100% load to a setpoint that is fixed at the  $\Delta P$  equivalent to 40% steam flow between zero load and 20% load and a linear function of  $\Delta P$  between the  $\Delta P$  equivalent to 40% steam flow at 20% load and the  $\Delta P$  equivalent to 110% steam flow at 100% load.

**Discussion**

The change is requested as the result of a number of inadvertent safety injection system actuations, both at the Surry facilities and at other similar facilities. The original zero steam load setpoint was selected arbitrarily at 20% steam flow. This was felt to be as low a setting as could be used without causing unnecessary safety injections. Experience has shown that this setting is so low that it does result in unnecessary safety injections caused by noise in the very low level signal that exists at hot shutdown and at low power level reactor operation. The inadvertent safety injections in turn cause unnecessary thermal shocks to the primary coolant systems.

**Evaluation**

The high steam flow signal provides a rapid safety injection and steam line isolation signal in the event of a large main steam line break. The effect

of the proposed change of the High steam flow setpoint is to reduce the setpoint approximately 10 to 20 percent over almost the entire range of steam

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load thereby providing for earlier response to steam line breaks. However, from 20 percent steam load down to zero steam load the revised setpoint would be higher (40% steam flow at zero load vs. 20% steam flow at zero load). For larger breaks, the Surry PSAR illustrates that steam flow increases within a fraction of a second to a value well above 40 percent of normal full flow. Therefore, there will be no discernable delay in actuating safety injection resulting from the proposed higher setpoint (40% vs. 20%) at low loads.

For small breaks (less than about 1.0 ft.<sup>2</sup>), the high steam flow signal is not actuated as the input signal for safety injection, since the steam release for these small breaks is less than 20% of normal full flow. Safety injection in this case, is provided by low steam line pressure or low pressurizer pressure and level. The licensee's July 10, 1975 letter included analytical results indicating that at a 50% of nominal steam flow break, an accident that bounds the licensee's desired upper ΔP setpoint of 40%, the delay in actuating the safety injection system is not significant as the nominal peak core thermal power only reaches 5.1%, well below the value of 15.8% of 100% of nominal given as acceptable in the PSAR.

In summary, this change provides an increased safety margin for automatic response to steam line breaks for plant operation at loads greater than 20%. For the less common operation at less than 20% steam load, the changed setpoint causes a slight, but inconsequential, delay in actuating safety injection following a large steam line break and has no effect on safety injection for small breaks. There is no significant increase in the probability or consequences of potential accidents as a result of this change. The change will have a beneficial effect in reducing spurious safety injections with the attending thermal shock.

Conclusions

We have concluded, based on the considerations discussed above, that: (1) because the change does 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 change does 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: AUG 7 1975

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UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC & POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY  
OPERATING LICENSES

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments No. 9 to Facility Operating Licenses No. DPR-32 and DPR-37 issued to Virginia Electric & Power Company (VEPCO) which revised Technical Specifications for operation of the Surry Power Station, Units 1 and 2, located in Surry County, Virginia. The amendments are effective as of the date of issuance.

The amendments revise the provisions in the Technical Specifications relating to a revision of the high steam flow setpoints.

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. Prior public notice of these amendments is not required since the amendments do not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendments dated July 5, 1974, as supplemented November 13, 1974, April 11 and July 10, 1975, (2) Amendments No. 9 to Licenses No. DPR-32 and DPR-37, with Change No. 24, and (3) the Commission's related Safety

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Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Swem Library, College of William & Mary, Williamsburg, Virginia 23185.

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 Reactor Licensing, Office of Nuclear Reactor Regulation.

Dated at Bethesda, Maryland, this AUG 7 1975

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:  
Robert A. Purple

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Reactor Licensing

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