

Mr. W. L. Stewart  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

Dear Mr. Stewart:

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: HYDROGEN  
MONITORS (TAC NOS. M84241 AND M84242)

The Commission has issued the enclosed Amendment No. 171 to Facility Operating License No. DPR-32 and Amendment No. 170 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 (TS) in response to your application transmitted by letter dated July 28, 1992.

These amendments delete the operability and surveillance requirements for the hydrogen monitor from the explosive gas monitoring instrumentation requirements for the waste gas holdup system. In addition, a requirement is added to submit a special report to the NRC if the oxygen concentration in a waste gas decay tank exceeds the TS limit and is not returned to below that limit in a specified time. Finally, administrative changes were made to achieve consistency with the Standard Technical Specifications.

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,  
(Original Signed By)

Bart C. Buckley, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 171 to DPR-32
- 2. Amendment No. 170 to DPR-37
- 3. Safety Evaluation

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

December 14, 1992

Docket Nos. 50-280  
and 50-281

Mr. W. L. Stewart  
Senior Vice President - Nuclear  
Virginia Electric and Power Company  
5000 Dominion Blvd.  
Glen Allen, Virginia 23060

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*Bart C. Buckley*

Bart C. Buckley, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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cc w/enclosures:  
See next page

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DATED: December 14, 1992

AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1  
AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File

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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. 171  
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 July 28, 1992, 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.

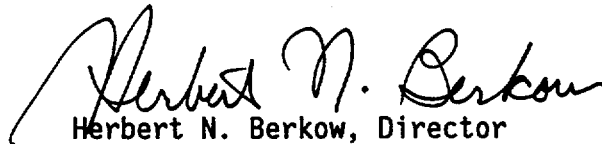
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 171, 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 its date of issuance and shall be implemented within 30 days.

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: December 14, 1992



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. 170  
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 July 28, 1992, 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.

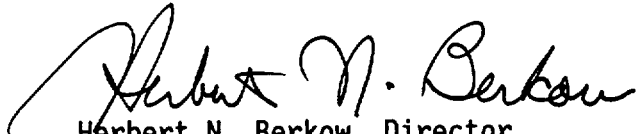
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 170, 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 its date of issuance and shall be implemented within 30 days.

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: December 14, 1992



ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

TS 3.7-1  
TS 3.7-20a  
TS 3.11-1  
TS 3.11-2  
--  
TS 4.1-1  
TS 4.1-9  
TS 4.9-1

Insert Pages

TS 3.7-1  
TS 3.7-20a  
TS 3.11-1  
TS 3.11-2  
TS 3.11-2a  
TS 4.1-1  
TS 4.1-9  
TS 4.9-1

### 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. The reactor trip system instrumentation channels and interlocks shall be operable as specified in TS Table 3.7-1.
- C. The Engineered Safeguards Actions and Isolation Function Instrumentation channels and interlocks shall be operable as specified in TS Tables 3.7-2 and 3.7-3 respectively.
- D. The Engineered Safety Features initiation instrumentation setting limits shall be as stated in TS Table 3.7-4.
- E. The explosive gas monitoring instrumentation channel shown in Table 3.7-5(a) shall be OPERABLE with its alarm setpoint set to ensure that the limits of Specification 3.11.A.1 are not exceeded.
  - 1. With an explosive gas monitoring instrumentation channel alarm setpoint less conservative than required by the above specification, declare the channel inoperable and take the action shown in Table 3.7-5(a).

**TABLE 3.7-5(a)**  
**EXPLOSIVE GAS MONITORING INSTRUMENTATION**

<u>Instrument</u>	<u>Total No. of Channels</u>	<u>Minimum OPERABLE Channels</u>	<u>Action</u>
<b>1. Waste Gas Holdup System Explosive Gas Monitoring System</b>			
<b>Oxygen Monitor</b>	<b>1</b>	<b>1</b>	<b>1</b>

**Action 1 -** With the number of channels OPERABLE less than required by the minimum OPERABLE channels requirement, operation of this waste gas holdup system may continue provided grab samples are collected (1) at least once per 4 hours during degassing operations to the waste gas decay tank and (2) at least once per 24 hours during other operations. Samples shall be analyzed within 4 hours after collection.

### 3.11 RADIOACTIVE GAS STORAGE

#### Applicability

Applies to the storage of radioactive gases.

#### Objective

To establish conditions by which gaseous waste containing radioactive materials may be stored.

#### Specification

##### A. Explosive Gas Mixture

1. The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration could exceed 4% by volume.
  - a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.
  - b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the affected tank and reduce the concentration of oxygen to less than or equal to 4% by volume, then take the action in 1.a above.
  - c. With the requirements of action 1.a above not satisfied, immediately suspend all additions of waste gases to the affected tank until the oxygen concentration is restored to less than or equal to 2% by volume, and submit a special report to the Commission within the next 30 days outlining the following:
    - (1) The cause of the waste gas decay tank exceeding the 2% oxygen limit.
    - (2) The reason why the oxygen concentration could not be returned to within limits.

(3) The actions taken and the time required to return the oxygen concentration to within limits.

2. The requirements of Specification 3.0.1 are not applicable.

**B. Gas Storage Tanks**

1. The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 24,600 curies of noble gases (considered as Xe-133).
2. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all addition of radioactive material to the tank and within 48 hours reduce the tank contents to within the limits.
3. The requirements of Specification 3.0.1 are not applicable.

**Basis**

**Explosive Gas Mixture**

Specification 3.11.A is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen. Maintaining oxygen below the concentration that will support combustion at any concentration of hydrogen provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR 50.

**Gas Storage Tanks**

The tanks included in Specification 3.11.B are those tanks for which the quantity of radioactivity contained is not limited directly or indirectly by another Technical Specification to a quantity that is less than the quantity which provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem in an event of 2 hours.

Restricting the quantity of radioactivity contained in each gas storage tank provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting total body exposure to an individual at the nearest exclusion area boundary will not exceed 0.5 rem. This is consistent with Branch Technical Position ETSB 11-5 in NUREG-0800, July 1981.

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

EXPLOSIVE GAS MONITORING INSTRUMENTATION REQUIREMENTS

<u>CHANNEL DESCRIPTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Waste Gas Holdup System Explosive Gas Monitoring System Oxygen Monitor	D	Q(1)	M

- 
- (1) 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  
M - Monthly  
Q - Quarterly



#### 4.9 RADIOACTIVE GAS STORAGE MONITORING SYSTEM

##### Applicability

Applies to the periodic monitoring of radioactive gas storage.

##### Objective

To ascertain that waste gas is stored in accordance with Specification 3.11.

##### Specification

- A. The concentration of oxygen in the waste gas holdup system shall be determined to be within the limits of Specification 3.11.A by continuously monitoring the waste gases in the waste gas holdup system with the oxygen monitor required to be OPERABLE by Table 3.7-5(a) of Specification 3.7.E.
- B. The quantity of radioactive material contained in each gas storage tank shall be determined to be within the limits of Specification 3.11.B at least once per month when the specific activity of the primary reactor coolant is  $\leq 2200 \mu\text{Ci/gm}$  dose equivalent Xe-133. Under the conditions which result in a specific activity  $> 2200 \mu\text{Ci/gm}$  dose equivalent Xe-133, the waste gas decay tanks shall be sampled once per day.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 171 TO FACILITY OPERATING LICENSE NO. DPR-32  
AND AMENDMENT NO. 170 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

1.0 INTRODUCTION

By letter dated July 28, 1992, the Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the Surry Power Station, Unit Nos. 1 and 2. The changes would (1) delete the operability and surveillance requirements of the hydrogen monitor from the explosive gas monitoring instrumentation requirements for the waste gas holdup system, and (2) add a requirement to submit a special report to the NRC if the oxygen concentration in a waste gas decay tank exceeds the TS and is not returned to below that limit in a specified time. Moreover, the NRC staff and the licensee modified Action Item 1 on TS Table 3.7-5(a) for clarification purposes which did not change the proposed no significant hazards consideration determination. In addition, administrative changes have been incorporated for consistency with NUREG-0452, Revision 4, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors." The changes include the capitalization of TS "defined" words and the reformatting of tables.

2.0 Proposed Technical Specification Changes

TS 3.11-A1 is being revised to require the oxygen concentration of the waste gas holdup tank be maintained at less than 2% by volume at all times whenever the hydrogen concentration could exceed 4% by volume. TS 3.7.E, 4.1.B and Table 3.7-5(a) are being revised to capitalize the TS defined word "operable" for consistency with Standard TS.

TS 3.7.E is being revised to indicate only one explosive gas monitoring channel is required for operability. The section is also being modified to refer to "alarm/trip" setpoint as "alarm" setpoint consistent with the actual function of the instrumentation.

TS Table 3.7-5(a) is being revised to delete the operability requirements for the hydrogen monitor and a "Total No. Of Channels" column is being added for consistency with the other tables in this section.

TS 3.11.A.1 is being revised to replace the word "exceeds" with the phrase "could exceed" to consider the normal operation of the waste gas holdup system with the hydrogen concentration in excess of 4%. TS 3.11.A.1.b is being revised to specifically reference TS 3.11.A.1.a as the required action once TS 3.11.A.1.b is met. In addition, TS 3.11.A.1.c is being added to require a special report to be submitted to the NRC within 30 days if the requirements of TS 3.11.A.1.a are not met. The report will be required to include the following information: (1) the cause of the waste gas holdup tank exceeding the 2% oxygen limit, and (2) the reason the oxygen concentration could not be returned to within limits, and (3) the actions taken and the time required to return the oxygen concentration to within the specified limits. The Bases of TS 3.11 is also being changed to delete the reference to maintaining hydrogen concentration within specified limits.

TS 4.1.A is being revised to add "Table 4.1-1A" to this section for completeness. The hydrogen monitor surveillance requirements are being deleted from TS Table 4.1-1A.

TS 4.9.A is being revised to delete the references to hydrogen concentration and the hydrogen monitor.

### 3.0 EVALUATION

The proposed changes, as specified above, ensure the concentration of potentially explosive gas mixtures contained in the waste gas holdup system will be maintained below the flammability limits of hydrogen and oxygen. Maintaining oxygen below the concentration that will support combustion at any concentration of hydrogen provides assurance that the release of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A, 10 CFR Part 50. Therefore, the staff finds the proposed changes acceptable.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendments. The State official had no comment.

### 5.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change the surveillance requirements. The NRC staff has determined that the 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

(57 FR 40223). 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.

6.0 CONCLUSION

The Commission has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: N. Stinson  
B. Buckley

Date: December 14, 1992