

*Tracked 50-280*

SEPTEMBER 27 1978

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  - DEisenhut
  - CParrish
  - DNeighbors
  - OELD
  - OI&E(5)
  - BJones(8)
  - BScharf(15)
  - JMcGough
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  - RDiggs
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  - JRBuchanan

Docket Nos. 50-280  
and 50-281

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

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 44 and 43 to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. These amendments consist of changes to the Technical Specifications in response to your application dated December 19, 1977.

These changes to the Technical Specifications, (1) reduce the allowable pressurizer heatup rate from 200°F/hr to 100°F/hr, (2) reflect a new title of "Resident Quality Control Engineers" to replace "Quality Control Engineer," and (3) correct a typographical error on page TS 3.16-2 which was issued on May 10, 1978.

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

Sincerely,

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

Enclosures:

1. Amendment No. 44 to DPR-32
2. Amendment No. 43 to DPR-37
3. Safety Evaluation
4. Notice

cc w/encl:  
See next page

*Comments by OELD have been incorporated. 9/27/78 JDR*

DOR:ORB#1  
DNeighbors:lb  
*6/30/78*  
*7/5/78*

DOR:EB  
*9/5/78*

OELD  
KARMAN  
*9/7/78*

DOR:ORB#1  
ASchwencer  
*9/27/78*

*Const. J*



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

September 27, 1978

Docket Nos. 50-280  
and 50-281

Virginia Electric and Power Company  
ATTN: Mr. W. L. Proffitt  
Senior Vice President - Power  
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These changes to the Technical Specifications, (1) reduce the allowable pressurizer heatup rate from 200°F/hr to 100°F/hr, (2) reflect a new title of "Resident Quality Control Engineer" to replace "Quality Control Engineer," and (3) correct a typographical error on page TS 3.16-2 which was issued on May 10, 1978.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "A. Schwencer".

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

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1. Amendment No. 44 to DPR-32
2. Amendment No. 43 to DPR-37
3. Safety Evaluation
4. Notice

cc w/encl:  
See next page

September 27, 1978

cc: Mr. Michael W. Maupin  
Hunton & Williams  
Post Office 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, Virginia 23683

Commonwealth of Virginia  
Council on the Environment  
903 Ninth Street Office Building  
Richmond, Virginia 23219

Mr. James R. Wittine  
Commonwealth of Virginia  
State Corporation Commission  
Post Office Box 1197  
Richmond, Virginia 23209

Chief, Energy Systems  
Analyses Branch (AW-459)  
Office of Radiation Programs  
U.S. Environmental Protection Agency  
Room 645, East Tower  
401 M Street, SW  
Washington, D.C. 20460

U.S. Environmental Protection Agency  
Region III Office  
ATTN: EIS COORDINATOR  
Curtis Building - 6th Floor  
6th and Walnut Streets  
Philadelphia, Pennsylvania 19106



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. 44  
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 December 19, 1977, 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. 44, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications."

3. This license amendment is effective within 30 days 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 27, 1978



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. 43  
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 December 19, 1977, 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. 43, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications."

3. This license amendment is effective within 30 days 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 27, 1978

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 & 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

Replace

TS 3.1-7

TS 3.1-7

TS 6.4-7a

TS 6.4-7a

TS 6.4-7b

TS 6.4-7b

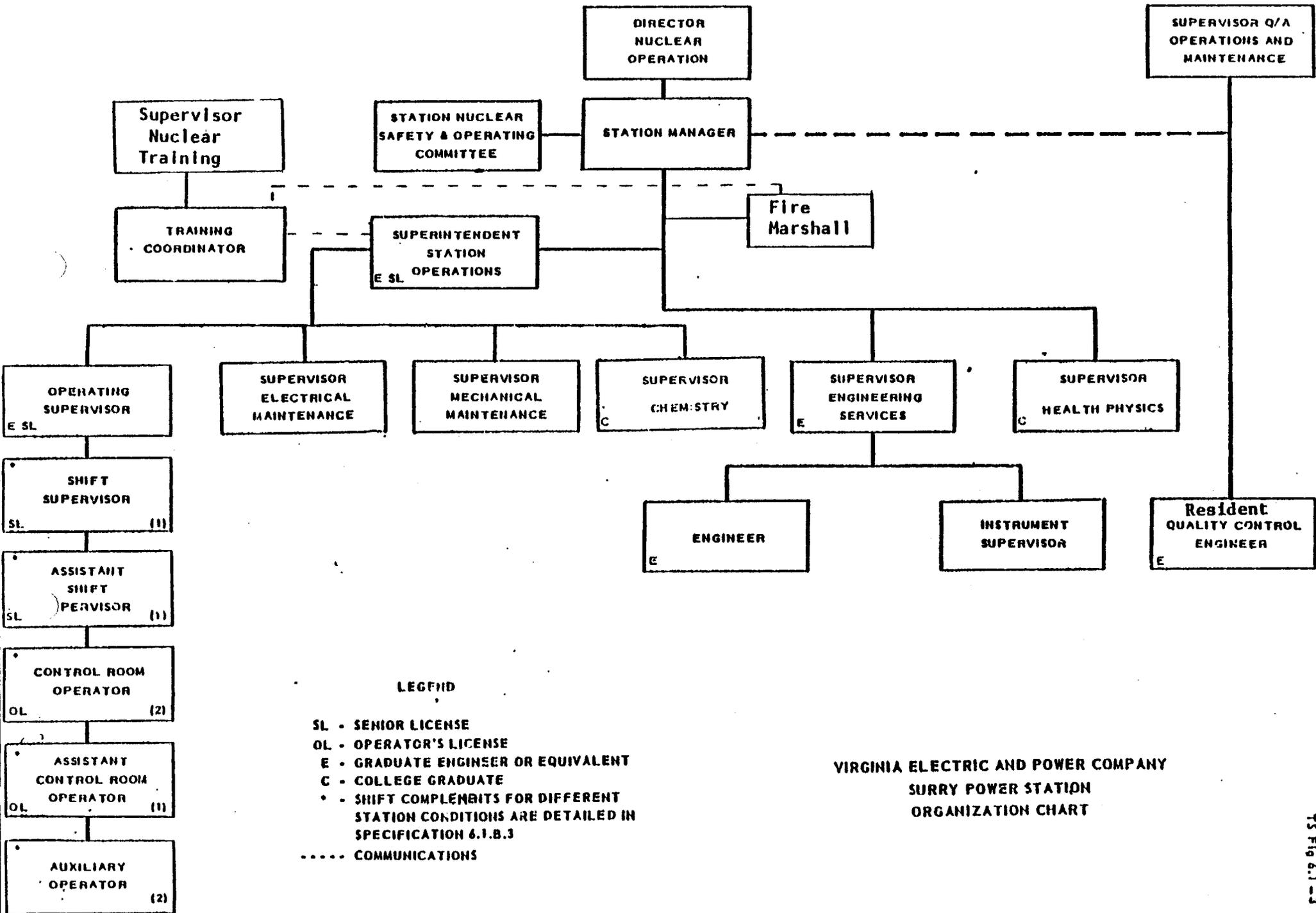
TS 3.16-2

TS 3.16-2

TS Fig 6.1-3

TS Fig 6.1-3

3. The pressurizer heatup and cooldown rates shall not exceed 100°F/hr. and 200°F/hr, respectively. The spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 320°F.
4. TS Figure 3.1-1 shall be updated periodically in accordance with the following procedures, before the calculated maximum exposure of the vessel exceeds the exposure for which TS Figure 3.1-1 applies.
  - a. The curve based on 0.25% Cu, in TS Figure 3.1-2 shall be used to predict the increase in transition temperature based on integrated power unless measurements on the most recently examined irradiation specimens show that this is not appropriate. In this case, a new curve having the same slope as the original shall be constructed such that it is above all the applicable data points.
  - b. At or before the end of the integrated power period for which TS Figure 3.1-1 applies, the limit lines on the figure shall be updated for a new integrated power period as follows. The total integrated reactor thermal power from startup to the end of the new period shall be converted to an equivalent integrated neutron exposure. The predicted increase in transition temperature at the end of the new period shall then be obtained from TS Figure 3.1-2 as revised by TS 3.1.B.4a above.



**LEGEND**

- SL - SENIOR LICENSE
- OL - OPERATOR'S LICENSE
- E - GRADUATE ENGINEER OR EQUIVALENT
- C - COLLEGE GRADUATE
- - SHIFT COMPLEMENTS FOR DIFFERENT STATION CONDITIONS ARE DETAILED IN SPECIFICATION 6.1.B.3
- ..... COMMUNICATIONS

**VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION  
ORGANIZATION CHART**

- D. All procedures described in A and b above shall be followed.
- E. Temporary changes to procedures described in A and B above which do not change the intent of the original procedure may be made, provided such changes are approved prior to implementation by the person designated below based on the type of procedure to be changed:

1. Administrative	Station Manager
2. Abnormal	Shift Supervisor
3. Annunciator	Shift Supervisor
4. Health Physics	*Health Physicists
5. Emergency	Shift Supervisor
6. Electrical Maintenance	*Electrical Foreman
7. Mechanical Maintenance	*Mechanical Foreman
8. Operating	Shift Supervisor
9. Periodic Test	*cognizant supervisor
10. Start-up Test	*Supervisor-Engineering Services
11. Special Test	*Supervisor-Engineering Services
12. Quality Assurance	Resident Quality Control Engineer
13. Chemistry	*Chemist

\*In addition, these procedures must have the approval of a licensed Senior Reactor Operator.

Such changes will be documented and subsequently reviewed by the Station Nuclear Safety and Operating Committee and approved by the Station Manager within seven days.

- F. Temporary changes to procedures described in A and B above which change the intent of the original procedure may be made, provided such changes are approved prior to implementation by the person designated below based on the type of procedure to be changed.

- |                       |   |
|-----------------------|---|
| 1. Administrative     | Station Manager   |
| 2. Abnormal           | Operating Supervisor or<br>Superintendent-Station<br>Operations   |
| 3. Annunciator        | Operating Supervisor or<br>Superintendent-Station<br>Operations   |
| 4. Health Physics     | Supervisor-Health Physics   |
| 5. Emergency          | Operating Supervisor or<br>Superintendent-Station<br>Operations   |
| 6. Maintenance        | Supervisor-Mechanical Main-<br>tenance<br>Supervisor-Electrical Main-<br>tenance<br>Instrument Supervisor |
| 7. Operating          | Operating Supervisor<br>Superintendent-Station Operations   |
| 8. Periodic Test      | Supervisor-Engineering Services   |
| 9. Start-up Test      | Supervisor-Engineering Services   |
| 10. Special Test      | Supervisor-Engineering Services   |
| 11. Quality Assurance | Resident-Quality Control<br>Engineer  |
| 12. Chemistry         | Supervisor-Chemistry  |

Such changes will be documented and subsequently reviewed by the Station Nuclear Safety and Operating Committee and approved by the Station Manager.

G. In cases of emergency, operations personnel shall be authorized to depart from approved procedures where necessary to prevent injury to personnel or damage to the facility. Such changes shall be documented and reviewed by the Station Nuclear Safety and Operating Committee and approved by the Station Manager.

4. Two physically independent circuits from the offsite transmission network to energize the 4,160 and 480 v emergency buses. One of these sources must be immediately available, i.e. primary source; and the other must be capable of being made available within 8 hours; i.e. dependable alternate source.
  5. Two operable flow paths for providing fuel to each diesel generator.
  6. Two station batteries, two chargers, and the d.c. distribution systems operable.
  7. Emergency diesel generator battery, charger and the d.c. control circuitry operable for the unit diesel generator and for the shared back-up diesel generator.
- B. During power operation or the return to power from hot shutdown conditions, the requirements of specification 3.16-A may be modified by one of the following:
1. One diesel generator may be unavailable or inoperable provided the operability of the other diesel generator is demonstrated daily. If this diesel generator is not returned to an operable status within 7 days, the reactor shall be brought to a cold shutdown condition. One diesel fuel oil flow path may be "inoperable" for 2 hours provided the other flow is proven operable. If after 24 hours, the inoperable flow path cannot be returned to service, the diesel shall be considered "inoperable". When the emergency diesel generator battery, charger or d.c. control circuitry is inoperable, the diesel shall be considered "inoperable".



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NOS. 44 AND 43 TO  
FACILITY 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 December 19, 1977, Virginia Electric and Power Company (the licensee) requested amendment of the Technical Specifications appended to Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2. The amendment would reduce the maximum pressurizer heatup rate from 200°F per hour to 100°F per hour. It would also reflect a change in title of the Quality Control Engineer to a new title of Resident Quality Control Engineer.

Background

In August 1977, Mitsubishi Heavy Industries, Ltd., of Japan, noted an inconsistency in the pressurizer heatup rate stated in their Technical Specifications. Specification 3.4.9 required a heatup rate of 200°F/hr; Specification 5.7.1, however, required a heatup rate of 100°F/hr. This discrepancy was reported to the Westinghouse Electric Corporation (Westinghouse), who then reviewed their analysis of the pressurizer heatup rate and determined that the correct heatup rate is 100°F/hr, and that the correct cooldown rate is 200°F/hr; the Technical Specifications for Surry stated that pressurizer heatup and cooldown rates were 200°F/hr. Westinghouse then notified the Nuclear Regulatory Commission (the Commission) and the licensee of this problem. The requested amendment would correct the error in the pressurizer heatup rate limit.

Evaluation

In designing the pressurizer, Westinghouse performed a thermal stress analysis which analyzed the fatigue resulting from a heatup rate of 100°F/hr and a cooldown rate of 200°F/hr. This analysis meets the standards of the ASME Code, Section III, which requires that the analysis be based on a usage factor. The usage factor represent the fraction of the fatigue life ( the total amount of stress that a particular component is designed to handle), with a usage factor of zero implying that no stress has been exerted on the component, and a usage factor of

one implying that the stress exerted on the component is equal to the amount of stress that the component is designed to handle. For any piece of equipment, certain components receive more stress than others. For the pressurizer, this component is the surge nozzle, which has a usage factor of 0.9 for the design numbers listed above. This usage factor is such that if the heatup and cooldown rates used in the analysis were exceeded more than a few times, the actual usage factor for the surge nozzle would exceed 1.0, which is not allowable under the ASME Code. Thus, we conclude that reducing the heatup rate limit from 200°F/hr to 100°F/hr is necessary to maintain thermal stresses in the pressurizer to allowable levels. For the same reasons, we further conclude that the cooldown rate limit presently listed in the Technical Specifications is adequate.

Because the current Technical Specification provision authorized higher rates of pressurizer heatup than the correct limit, the question arose as to whether the correct limit of 100°F per hour has been exceeded in the past. Discussions with Westinghouse indicate that this is unlikely. This is because system capabilities and Technical Specification limits on the rate of reactor coolant system heatup and pressurization effectively preclude pressurizer heatup rates in excess of 50°F to 75°F per hour.

Furthermore, to confirm that this has been the experience at Surry, we requested by letter dated October 20, 1977, that the licensee review all of his applicable operating records to determine if the limiting heatup rate of 100°F per hour had ever been exceeded. In the December 19, 1977 letter the licensee reported that his review revealed no instances when the rate of 100°F per hour had been exceeded. Accordingly, we conclude that the only action required for Surry is modification of the Technical Specifications to reduce the limiting pressurizer heatup rate from 200°F per hour to 100°F per hour.

We have talked with Westinghouse and Westinghouse is performing a review of the stress analyses for components of the reactor coolant pressure boundary to assure that no similar inadvertent error appears in any other portion of the applicable Technical Specifications. This action will be confirmed by Westinghouse.

With regard to the title change adding "Resident" to the position of Quality Control Engineer, this is a title change only. There has been no change identified on the required degree of independence of this position. We therefore view this as a non-substantive change, which is acceptable.

Environmental Consideration

We have determined that these 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 these 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 these amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do 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 27, 1978

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. 44 and 43 to Facility Operating License Nos. DPR-32 and DPR-37, issued to Virginia Electric and Power Company (the licensee), which revised Technical Specifications for operation of the Surry Power Station, Unit Nos. 1 and 2 (the facilities) located in Surry County, Virginia. The amendments are effective within 30 days of the date of issuance.

These changes to the Technical Specifications, (1) reduce the allowable pressurizer heatup rate from 200°F/hr to 100°F/hr, (2) reflect a new title of "Resident Quality Control Engineer" to replace "Quality Control Engineer," and (3) correct a typographical error on page TS 3.16-2 which was issued on May 10, 1978.

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 was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §55.1(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 amendments dated December 19, 1977, (2) Amendment Nos. 44 and 43 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, NW, Washington, D. C. and at 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 27th day of September 1978.

FOR THE NUCLEAR REGULATORY COMMISSION



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