

July 1, 1999

Mr. J. P. O'Hanlon
Senior Vice President - Nuclear
Virginia Electric and Power Company
5000 Dominion Blvd.
Glen Allen, Virginia 23060

Distribution:
See next page

SUBJECT: SURRY UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: REVISED
INSPECTION REQUIREMENTS FOR REACTOR COOLANT PUMP
FLYWHEELS (TAC NOS. MA5002 AND MA5003)

Dear Mr. O'Hanlon:

The Commission has issued the enclosed Amendment No. 221 to Facility Operating License No. DPR-32 and Amendment No. 221 to Facility Operating License No. DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The amendments change the Technical Specifications (TS) in response to your application transmitted by letter dated February 16, 1999.

These amendments revise TS Section 4.2 for Units 1 and 2. The changes relax the surveillance requirements for reactor coolant pump (RCP) flywheels. The flywheels provide extended reactor coolant flow coastdown capability if electric power for the RCPs is lost. Previously, the flywheel inspections included an ultrasonic examination (UT) of areas of high stress concentration at the base and keyway every 3 years, and complete UT every 10 years. The changes require only a 10-year UT based upon an analysis presented in a Westinghouse topical report which has been reviewed and accepted by the NRC staff.

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:
Gordon E. Edison, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Docket Nos. 50-280 and 50-281

Enclosures:

1. Amendment No. 221 to DPR-32
2. Amendment No. 221 to DPR-37
3. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 1, 1999

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Virginia Electric and Power Company
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Sincerely,

A handwritten signature in cursive script that reads "Gordon E. Edison".

Gordon E. Edison, Senior Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-280 and 50-281

Enclosures:

1. Amendment No. 221 to DPR-32
2. Amendment No. 221 to DPR-37
3. Safety Evaluation

cc w/encls: See next page

Mr. J. P. O'Hanlon
Virginia Electric and Power Company

Surry Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 221
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 February 16, 1999, 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.

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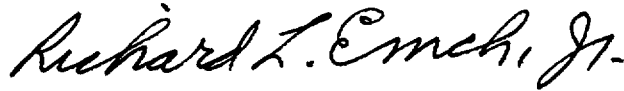
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-32 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 221 , 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



Richard L. Emch, Jr., Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 1, 1999



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 221
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 February 16, 1999, 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.

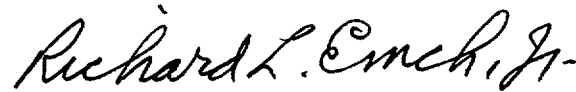
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 221 , 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



Richard L. Emch, Jr., Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 1, 1999

ATTACHMENT TO

LICENSE AMENDMENT NO. 221 TO FACILITY OPERATING LICENSE NO. DPR-32

LICENSE AMENDMENT NO. 221 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Remove Page

TS 4.2-3

Insert Page

TS 4.2-3

TABLE 4.2-1

SECTION A. MISCELLANEOUS INSPECTIONS

<u>Item No.</u>	<u>Required Examination Area</u>	<u>Required Examination Methods</u>	<u>10-Year Interval Inspection</u>	<u>Remarks</u>
1.1	Deleted			
1.2	Low Head SIS piping located in valve pit	Visual	Non-applicable	This pipe shall be visually inspected once per 18 months.
1.3	Primary Pump Flywheel	See remarks	See remarks	Inspect once every 10 years by a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle of one-half the outer radius or a surface examination (MT and/or PT) of exposed surfaces defined by the volume of the disassembled flywheels.
1.4	Low Pressure Turbine Rotor	Visual and Magnetic Particle or Dye Penetrant	See remarks	100% of blades every six operating years. Inspections are normally performed concurrent with LP turbine rotor disk and hub inspections.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 221 TO FACILITY OPERATING LICENSE NO. DPR-32
AND AMENDMENT NO. 221 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 February 16, 1999, Virginia Electric and Power Company (the licensee) submitted for staff review and approval a proposed Technical Specifications (TS) change regarding inspection requirements for the reactor coolant pump (RCP) flywheels. This issue was addressed in the Westinghouse topical report, WCAP-14535A, "Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination," which was approved by the United States Nuclear Regulatory Commission (USNRC) with certain conditions. These conditions are specified in the safety evaluation report (SER) dated September 12, 1996, for WCAP-14535A. The licensee intended to apply this topical report to Surry Units 1 and 2 and change their RCP flywheels inspection intervals in accordance with the conclusion of the SER on WCAP-14535A.

The function of the RCP in the reactor coolant system (RCS) of a pressurized water reactor (PWR) plant is to maintain an adequate cooling flow rate by circulating a large volume of primary coolant water at high temperature and pressure through the RCS. A concern over overspeed of the RCP and its potential for failure led to the issuance of Regulatory Guide (RG) 1.14 in 1971. Since then, all licensees for PWR plants, with very few exceptions, have adopted the guidelines of RG 1.14 to conduct their RCP flywheel examinations. These requirements are normally specified in the individual plant's TS as is the case for Surry Units 1 and 2.

2.0 EVALUATION

In the SER on Westinghouse topical report WCAP-14535A, the staff stated that the evaluation methodology for RCP flywheels in WCAP-14535A is appropriate and the criteria are in accordance with the design criteria of RG 1.14. In addition, the staff specified:

- (1) Licensees who plan to submit a plant-specific application of this topical report for flywheels made of SA 533 B material need to confirm that their flywheels are made of SA 533 B material. Further, licensees having Group-15 flywheels need to demonstrate that the material properties of their A516 material are equivalent to SA 533 B material, and its reference temperature, RT_{NDT} , is less than 30°F.

Enclosure

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- (2) Licensees who plan to submit a plant-specific application of this topical report for their flywheels not made of SA 533 B or A516 material need to either demonstrate that their flywheel material properties are bounded by those of SA 533 B material, or provide the minimum specified ultimate tensile stress, S_u , the fracture toughness, K_{Ic} , and the reference temperature, RT_{NDT} , for that material. For the latter, the licensees should employ these material-specific properties, and use the methodology in the topical report, as extended in the two responses to the staff's request for additional information, to provide an assessment to justify a change in inspection schedules for their plants.
- (3) Licensees meeting either (1) or (2) above should either conduct a qualified in-place ultrasonic testing (UT) examination of the volume from the inner bore of the flywheel to the circle of one-half the outer radius or conduct a surface examination (MT and/or PT) of exposed surfaces defined by the volume of the disassembled flywheels once every 10 years. The staff considers this 10-year inspection requirement not burdensome when the flywheel inspection is conducted during scheduled inservice inspection or RCP motor maintenance. This would provide an appropriate level of defense in depth.

Further, the staff required:

Licensees with Group-10 flywheels need to confirm in the near term that their flywheels have an adequate shrink fit of the flywheel at the maximum overspeed.

The licensee confirmed in its submittal that the flywheels for Surry Units 1 and 2 are made of SA 533 B material. Hence, only (1) and (3) apply. The staff further verified that the flywheels for Surry Units 1 and 2 do not belong to either Group 10 or Group 15 flywheels, for which additional analyses need to be performed. Therefore, the plant-specific applicability of WCAP-14535A to Surry Units 1 and 2 has been established, and the 10-year inspection requirement with details specified in (3) is acceptable.

The staff has determined that the analysis in the Westinghouse topical report WCAP-14535A is applicable to Surry Units 1 and 2. Hence, the staff accepts the licensee's proposed changes, i.e., 10-year inspection intervals for RCP flywheels, in accordance with (3) above, to TS 4.2, Augmented Inspections, Table 4.2-1, Item 1.3, for both units.

3.0 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.

4.0 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 a surveillance requirement. 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 (64 FR 24204). 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.

5.0 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 Contributor: S. Sheng

Date: July 1, 1999

DATED: July 1, 1999

AMENDMENT NO. 221 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1
AMENDMENT NO. 221 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File

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