

May 20, 1994

Docket Nos. 50-280
and 50-281

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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: CONTAINMENT
SPRAY SYSTEMS NOZZLE SURVEILLANCE FREQUENCY (TAC NOS. M89014
AND M89024)

The Commission has issued the enclosed Amendment No. 191 to Facility
Operating License No. DPR-32 and Amendment No. 191 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 in response to your application transmitted by letter dated
February 25, 1994.

These amendments revise the surveillance frequency of the nozzles in the
containment spray and recirculation spray systems from 5 to 10 years.

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. 191 to DPR-32
2. Amendment No. 191 to DPR-37
3. Safety Evaluation

cc w/enclosures:
See next page

OFC :LA:PDII-2 :PM:PDII-2 :SCSB :D:PDII-2 :OGC
 NAME :ETana *ETT* :BBuckley *BCB* :RBarrett *[Signature]* :HBerlow *[Signature]* : *[Signature]* *with changes*
 DATE : 4/26/94 : 4/26/94 : 5/6/94 : 5/9/94 : 5/11/94 :

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Virginia Electric and Power Company

Surry Power Station

cc:

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DATED: May 20, 1994

AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1
AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File

NRC & Local PDRs

PDII-2 Reading

S. Varga, 14/E/4

H. Berkow

E. Tana

B. Buckley

OGC

D. Hagan, 3302 MNBB

G. Hill P-137 (4)

C. Grimes, 11/F/23

R. Barrett, 8-H-7

ACRS (10)

OPA

OC/LFMB

D. Verelli, R-II



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. 191
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 25, 1994, 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. 191, 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: May 20, 1994



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. 191
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 25, 1994, 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.

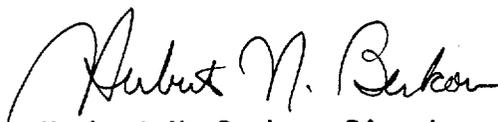
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-37 is hereby amended to read as follows:

(B) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 191, 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: May 20, 1994

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

TS 4.5-1
TS 4.5-2
TS 4.5-3
TS 4.5-4

Insert Pages

TS 4.5-1
TS 4.5-2
TS 4.5-3
TS 4.5-4

4.5 SPRAY SYSTEMS TESTS

Applicability

Applies to the testing of the Spray Systems.

Objective

To verify that the Spray Systems will respond promptly and perform their design function, if required.

Specification

A. Each containment spray subsystem shall be demonstrated OPERABLE:

1. By verifying, that on recirculation flow, each containment spray pump performs satisfactorily when tested in accordance with Specification 4.0.5.
2. By verifying that each motor-operated valve in the containment spray flow path performs satisfactorily when tested in accordance with Specification 4.0.5.
3. At least once per 10 years, coincident with the closest refueling outage, by performing an air or smoke flow test and verifying each spray nozzle is unobstructed.
4. Coincident with the containment spray pump test described in Specification 4.5.A.1, by verifying that no particulate material clogs the test spray nozzles in the refueling water storage tank.

B. Each recirculation spray subsystem shall be demonstrated OPERABLE:

1. By verifying each recirculation spray pump performs satisfactorily when tested in accordance with Specification 4.0.5.

2. By verifying that each motor-operated valve in the recirculation spray flow paths performs satisfactorily when tested in accordance with Specification 4.0.5.
 3. At least once per 10 years, coincident with the closest refueling outage, by performing an air or smoke flow test and verifying each spray nozzle is unobstructed.
 4. At least once each refueling outage by verifying that total system uncollected leakage from valves, flanges, and pumps located outside containment does not exceed 964 cc/hr.
- C. Each weight-loaded check valve in the containment spray and outside containment recirculation spray subsystems shall be demonstrated OPERABLE at least once each refueling period, by cycling the valve one complete cycle of full travel and verifying that each valve opens when the discharge line of the pump is pressurized with air and seats when a vacuum is applied.
- D. A visual inspection of the containment sump and the inside containment recirculation spray pump wells and the engineered safeguards suction inlets shall be performed at least once each refueling period and/or after major maintenance activities in the containment. The inspection should verify that the containment sump and pump wells are free of debris that could degrade system operation and that the sump components (i.e., trash racks, screens) are properly installed and show no sign of structural distress or excessive corrosion.

Basis

The flow testing of each containment spray pump is performed by opening the normally closed valve in the containment spray pump recirculation line returning water to the refueling water storage tank. The containment spray pump is operated and a quantity of water recirculated to the refueling water storage tank. The discharge to the tank is divided into two fractions; one for the major portion of the recirculation flow and the other to pass a small quantity of water through test nozzles which are identical with those used in the containment spray headers.

The purpose of the recirculation through the test nozzles is to assure that there are no particulate material in the refueling water storage tank small enough to pass through pump suction strainers and large enough to clog spray nozzles.

Due to the physical arrangement of the recirculation spray pumps inside the containment, it is impractical to flow-test them other than on a refueling outage frequency. Flow testing of these pumps requires the physical modification of the pump discharge piping and the erection of a temporary dike to contain recirculated water. The length of time required to setup for the test, perform the test, and then reconfigure the system for normal operation is prohibitive to performing the flow-test on even the cold shutdown frequency. Therefore, the flow-test of the inside containment recirculation spray pumps will be performed on a refueling outage frequency.

The inside containment recirculation spray pumps are capable of being operated dry for approximately 60 seconds without significantly overheating and/or degrading the pump bearings. During this dry pump check, it can be determined that the pump shafts are turning by rotation sensors which indicate in the Main Control Room. In addition, motor current will be compared with an established reference value to ascertain that no degradation of pump operation has occurred.

The recirculation spray pumps outside the containment have the capability of being dry-run and flow tested. The test of an outside recirculation spray pump is performed by closing the containment sump suction line valve and the isolation valve between the pump discharge and the containment penetration. This allows the pump casing to be filled with water and the pump to recirculate water through a test line from the pump discharge to the pump casing.

With a system flush conducted to remove particulate matter prior to the installation of spray nozzles and with corrosion resistant nozzles and piping, it is not considered credible that a significant number of nozzles would plug during the life of the unit to reduce the effectiveness of the subsystems. Therefore, the provisions to air-test the nozzles every ten years, coinciding with the closest refueling outage, is sufficient to indicate that plugging of the nozzles has not occurred.

The spray nozzles in the refueling water storage tank provide means to ensure that there is no particulate matter in the refueling water storage tank and the containment spray subsystems which could plug or cause deterioration of the spray nozzles. The nozzles in the tank are identical to those used on the containment spray headers. The flow test of the containment spray pumps and recirculation to the refueling water storage will indicate any plugging of the nozzles by a reduction of flow through the nozzles.

Performing the containment sump and pump well inspections will reduce the potential for system degradation due to sump debris associated with refueling activities or major maintenance activities as well as reduce wear on the inside containment recirculation spray pumps during dry testing. Ensuring proper installation and structural integrity of the trash racks and sump screens will prevent ingress of debris generated during the DBA and will allow long term containment cooling and recirculation mode cooling of the core.

References

FSAR Section 6.3.1, Containment Spray Pumps
FSAR Section 6.3.1, Recirculation Spray Pumps



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-32
AND AMENDMENT NO. 191 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

Pursuant to 10 CFR 50.90, the Virginia Electric and Power Company (the licensee), by letter dated February 25, 1994, submitted proposed changes to the Surry Power Station, Units 1 and 2 Technical Specifications (TS). The proposed changes would revise the surveillance frequency from 5 to 10 years for the spray nozzles in the Containment Spray and Recirculation Spray Systems at the Surry Power Station.

2.0 TS CHANGES

The surveillance intervals for the spray nozzles in the Containment Spray System and the Recirculation Spray System TS 4.5.a.3 and 4.5.b.3 are being changed from 5 to 10 years. The Basis is also being updated to reflect the changes in the surveillance frequency.

3.0 EVALUATION

The spray nozzles in the Containment Spray and Recirculation Spray Systems are fabricated from stainless steel. The spray systems are currently tested on a 5-year interval to confirm the absence of blockage that could potentially impact the required flow rates following a loss-of-coolant accident.

NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," dated December 1992, evaluated the testing of spray nozzles in pressurized water reactors' containment spray systems with stainless steel piping. The conclusion drawn from this evaluation was that the corrosion of stainless steel piping is negligible during the extended surveillance interval. Therefore, since the spray systems are maintained dry and there are no other postulated mechanisms that would cause blockage, it was concluded that the surveillance interval could be increased from 5 to 10 years without any reduction in the plant safety. Moreover, no clogging of the nozzles has been observed to date during the tests conducted at the Surry facility. The

proposed reduced testing of the spray systems' nozzles remains adequate to ensure operability of the nozzles to mitigate the consequences of a Design Basis Accident. Based on all of the above, the staff finds the proposed changes to be 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 or change 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 (59 FR 17608). 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 Contributor: B. Buckley

Date: May 20, 1994