

March 10, 1987

Posted
Amdt. 113
to DPR-37

Docket Nos. 50-280
and 50-281

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Mr. W. L. Stewart
Vice President - Nuclear Operations
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Stewart:

The Commission has issued the enclosed Amendment No. 113 to Facility Operating License No. DPR-32 and Amendment No. 113 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 December 11, 1985, as supplemented May 13, 1986.

These amendments revise the Technical Specifications to allow the movement of the transfer canal door over the spent fuel pool if necessary.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Sincerely,

/s/

Chandu P. Patel, Project Manager
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 113 to DPR-32
2. Amendment No. 113 to DPR-37
3. Safety Evaluation

cc: w/enclosures
See next page

LA:PAD#2
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Mr. W. L. Stewart
Virginia Electric and Power Company

Surry Power Station

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James B. Kenley, M.D., Commissioner
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109 Governor Street
Richmond, Virginia 23219



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. 113
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 11, 1985, as supplemented May 13, 1986, 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. 113, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 10, 1987



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. 113
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 11, 1985, as supplemented May 13, 1986, 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 3.8 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. 113, 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Lester S. Rubenstein, Director
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 10, 1987

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 113 FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 113 FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NOS. 50-280 AND 50-281

Revise Appendix A as follows:

Remove Pages

3.10-4

Insert Pages

3.10-4

12. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

13. A spent fuel cask shall not be moved into the Fuel Building unless the Cask Impact Pads are in place on the bottom of the spent fuel pool.
 14. Two trains of the control and relay room emergency ventilation system shall be operable. With one train inoperable for any reason, demonstrate the other trains is operable by performing the test in Specification 4.20.A.1. With both trains inoperable, comply with Specification 3.10.B.
 15. Containment purge shall be filtered through high efficiency particulate air filters and charcoal absorbers.
- B. If any one of the specified limiting conditions for refueling is not met, refueling of the reactor shall cease, work shall be initiated to correct the conditions so that the specified limit is met, and no operations which increase the reactivity of the core shall be made.
 - C. After initial fuel loading and after each core refueling operation and prior to reactor operation at greater than 75% of rated power, the movable incore detector system shall be utilized to verify proper power distribution.
 - D. The requirements of 3.0.1 are not applicable.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 113 TO FACILITY OPERATING LICENSE NO. DPR-32
AND AMENDMENT NO. 113 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

INTRODUCTION

By a letter dated December 11, 1985, as supplemented May 13, 1986, Virginia Electric and Power Company (the licensee) requested amendments to License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. The proposed change would revise the Technical Specifications Section 3.10 to allow the movement of the transfer canal door over the spent fuel pool, if necessary.

DISCUSSION AND EVALUATION

The licensee requested a change to the Surry Power Station, Units 1 and 2 Technical Specifications Section 3.10 which imposes a load limit of 110% of the weight of a fuel assembly when carrying heavy loads over the spent fuel. The requested change would allow the movement of the 3600 lb transfer canal door over the spent fuel pool in the event the transfer canal door requires maintenance. In the December 11, 1985 letter, and in a subsequent letter dated May 13, 1986, the licensee discussed the transfer canal door drop analysis and the approach being used to meet the guidelines of Standard Review Plan (SRP) Section 9.1.5, and NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants."

For heavy loads to be transported over the spent fuel pool, the guidance provided in Sections 5.1 and 5.1.1 of NUREG-0612 should be met. During the Phase I review of the control of heavy loads at Surry, completed in May 1984, the Surry load handling systems were evaluated against the guidelines of Section 5.1.1 of NUREG-0612. The load handling systems met the guidelines and were found acceptable. Since no load handling system procedure changes, except as noted below, or no design changes are necessary for the requested Technical Specification change, the Phase I evaluation remains valid. However, since the transfer canal door

would be traveling over spent fuel, the criteria specified in Section 5.1 of NUREG-0612 need to be addressed. Only Criteria I, II and III are applicable for this case; these criteria are:

- I. Releases of radioactive material that may result from damage to spent fuel based on calculations involving accidental dropping of a postulated heavy load produce doses that are well within 10 CFR Part 100 limits of 300 rem thyroid, 25 rem whole body (analyses should show that doses are equal to or less than 1/4 of Part 100 limits);
- II. Damage to fuel and fuel storage racks based on calculations involving accidental dropping of a postulated heavy load, does not result in a configuration of the fuel such that K_{eff} is larger than 0.95; and
- III. Damage to the reactor vessel or the spent fuel pool based on calculations of damage following accidental dropping of a postulated heavy load is limited so as not to result in water leakage that could uncover the fuel (makeup water provided to overcome leakage should be from a borated source of adequate concentration if the water being lost is borated).

The licensee stated in its May 13, 1986 letter that no spent fuel would be damaged if the transfer canal door was dropped onto the spent fuel pool racks. However, a control rod assembly could be damaged resulting in the release of radioactivity. A licensee evaluation of a fuel handling accident in the spent fuel pool, assuming all 204 fuel rods in a fuel assembly fail, showed that the radiological consequences are below the guidelines of 10 CFR Part 100. Since a control rod does not contain fissionable material, the licensee concluded that any radioactivity released from a damaged control rod would be much less than that which could be released from a damaged fuel assembly, with radiological consequences well within the criteria of NUREG-0612 (25% of the 10 CFR 100 limits). The staff concurs with the licensee's evaluation that there would be no fuel assembly damage, and that the consequences of damaging a control rod would satisfy Criterion I of NUREG-0612, Section 5.1, and 10 CFR Part 100.

In the May 13, 1986 letter the licensee stated that for the worst case scenario of a dropped transfer canal door, only one cell in the spent fuel rack would be damaged. The resulting damage would be limited to local crushing of the top 2.42 inches of the impacted spent fuel rack cell. Dislodging the impacted cell from the rack would entail only a vertical movement of the cell, and the center-line distance between the cells would remain unchanged in the active fuel area. Thus, subcriticality (K_{eff} less than 0.95) would be maintained. The staff concurs with the licensee's conclusion; thus, Criterion II of NUREG-0612, Section 5.1 is satisfied.

The most limiting case with respect to damage to the spent fuel pool liner is a postulated drop of the transfer canal door over a leak test channel located on the pool floor. The licensee's analysis showed that the liner plate would deform a maximum of 0.132 inches, and that the concrete surrounding the test channel would absorb the remaining impact energy. The licensee stated that the stainless steel liner would yield along the edge of the channel but would not fracture because of the high ductility of the stainless steel. Thus, there would be no leakage of water from the pool. The staff concurs with the conclusion; therefore, Criterion III of NUREG-0612 Section 5.1 is satisfied.

Based on the above evaluation, the staff concludes that movement of the transfer canal door, using the spent fuel pool load handling system at Surry Power Station, meets the guidelines of SRP Section 9.1.5 and NUREG-0612, and that there is reasonable assurance that movement of the transfer canal door in the manner proposed will not cause undue risk to the health and safety of the public. Therefore, the requested change to the Surry Technical Specifications to allow movement of the transfer canal door over the spent fuel pool is acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these 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. 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.

CONCLUSION

We have 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, and (2) 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.

Dated: March 10, 1987

Principal Contributors:

R. J. Giardina