



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 222 TO FACILITY OPERATING LICENSE NO. DPR-32
AND AMENDMENT NO. 222 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 April 28, 1999, Virginia Electric and Power Company (the licensee) proposed amendments to the Technical Specifications (TS) for Surry Power Station, Units 1 and 2. The proposed amendments would decrease the minimum-required volume of sodium hydroxide solution in the chemical addition tank (CAT) from 4200 gallons to 3930 gallons. The licensee requested this change in order to provide additional operating margin for the CAT. Engineering evaluation performed by the licensee has indicated that the decreased volume in the CAT will still provide enough sodium hydroxide to the water coming from the Refueling Water Storage Tank (RWST) and other sources of borated water to maintain pH of the spray solution and the containment sump at specified values.

The proposed amendment includes a minor administrative change to Table 4.1-2B in the TS which specifies minimum frequencies for different sampling tests. These changes consist of slightly modifying the format of the table and clarifications.

2.0 EVALUATION

The CAT contains sodium hydroxide solution which is gravity-fed to the borated water coming from the RWST in order to maintain alkaline pH in the post-LOCA sprays and containment sump. The current TS requires a minimum of 4200 gallons of sodium hydroxide solution at between 17 and 18 percent concentration in order to ensure that the pH of the spray solution and containment sump is maintained at or above 8.5 and 7.0, respectively. Maintaining these pH values is needed to ensure that no stress corrosion cracking or reevolution of radioactive iodine will take place in the post-LOCA environment. However, 4200 gallons of solution in the CAT, which has a capacity of 4330 gallons, provides a very narrow operational margin. In order to increase this margin, the licensee reevaluated the minimum volume of sodium hydroxide solution needed for maintaining the required alkalinity levels. The results of this evaluation have indicated that reducing the volume of 17 to 18 percent sodium hydroxide solution to 3800 gallons causes only a very slight decrease in pH which never goes below the specified limits. This allowed the licensee to specify for the CAT a minimum volume of 3930 gallons of sodium hydroxide solution. This volume includes a margin of 3.1 percent which is greater than the instrument channel statistical allowance associated with the CAT level indication.

The staff has reviewed the assumptions and methodologies used by the licensee in its analyses to justify the requested modifications. The staff also performed an independent verification of the licensee's calculations. The staff found that all the justifications were well supported by the appropriate licensee analyses.

The proposed change to Table 4.1-2B is acceptable because there is no safety impact of correcting an earlier misprint and deleting a reference that is no longer applicable.

The staff has reviewed the modification to the Surry Power Station, Units 1 and 2 TS proposed by the licensee. The proposed modification changes the minimum required volume of sodium hydroxide solution in the CAT. Based on its review, the staff concludes that all the TS changes proposed in this submittal are acceptable.

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. 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 48869). 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.

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Date: November 1, 1999

DATED: November 1, 1999

AMENDMENT NO. 222 TO FACILITY OPERATING LICENSE NO. DPR-32 - SURRY UNIT 1
AMENDMENT NO. 222 TO FACILITY OPERATING LICENSE NO. DPR-37 - SURRY UNIT 2

Docket File

PUBLIC

PDII-1 R/F

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