

August 6, 1996

Mr. C. S. Hinnant, Vice President
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29551-0790

SUBJECT: ISSUANCE OF AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-23 REGARDING REFUELING FILTER SYSTEM FANS - H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (TAC NO. M93241)

Dear Mr. Hinnant:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 172 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. This amendment changes the Technical Specifications in response to your request dated July 17, 1995, as supplemented May 2, 1996, and July 1, 1996.

The amendment changes Technical Specification (TS) section 3.8 to specify that the spent fuel building refueling filter fan and at least one containment purge fan shall be shown to operate within plus or minus 10 percent of the design flow.

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

Sincerely,
Original signed by:

Brenda L. Mozafari, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

- 1. Amendment No. 172 to DPR-23
- 2. Safety Evaluation

cc w/enclosures:
See next page

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AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-23 - H. B. ROBINSON
STEAM ELECTRIC PLANT, UNIT NO. 2

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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 172
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company (the licensee), dated July 17, 1995, as supplemented May 2, 1996, and July 1, 1996, 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-23 is hereby amended to read as follows:

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B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 172, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Bart C. Buckley for

Eugene V. Imbro, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 6, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 172

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Replace the following page of the Appendix A Technical Specifications with the enclosed page. The revised area is indicated by a marginal line.

Remove Page

Insert Page

3.8-3

3.8-3

- j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.
 - k. The reactor shall be subcritical as required by 3.10.8.3.
- 3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:
- a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.
 - b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.
 - c.
 - 1. The Spent Fuel Building refueling filter fan shall be shown to operate within $\pm 10\%$ of the design flow.
 - 2. At least one Containment purge filter fan shall be shown to operate within $\pm 10\%$ of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.
 - d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.
 - e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 172 TO FACILITY OPERATING LICENSE NO. DPR-23
CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated July 17, 1995, as supplemented May 2, 1996, and July 1, 1996, the Carolina Power & Light Company (licensee) submitted a request for changes to the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR), Technical Specifications (TS). Currently, the TS require the licensee to demonstrate that all filter system fans, i.e., two containment purge filter fans and one spent fuel building (SFB) refueling filter fan, can operate within 10% of their design flows during refueling operations. The requested changes would revise TS section 3.8 to specify that the spent fuel building refueling filter fan and at least one containment purge fan shall be shown to operate within ± 10 percent of the design flow.

The letters dated May 2, 1996, and July 1, 1996, provided clarifying information that did not change the scope of the July 17, 1995, submittal and the proposed no significant hazards consideration.

2.0 EVALUATION

The safety-related SFB refueling filter fan (HVE-15A) and nonsafety-related containment purge filter fans (HVE-1A and HVE-1B) are designed to filter the radioactive material release resulting from a design basis fuel handling accident (FHA) and mitigate the dose consequences to the public from an FHA. The ventilation system in both the containment and the SFB are in operation under administrative control during refueling operation. The TS requirement to test and ensure that the filtration flow rate remains within $\pm 10\%$ of design flow should be applicable to all three filter system fans. Currently, HBR TS 3.8.2.c requires that all three filter system fans must be shown to operate within $\pm 10\%$ of design flow.

The SFB refueling filter unit contains prefilters, high-efficiency particulate air (HEPA) filters, a fan (HVE-15A), an electric duct heater, and charcoal filters. During refueling, the safety-related fan, HVE-15A, must be in operation within the specified flow range; it is required by the current TS 3.8.2.c as well as by the proposed TS 3.8.2.c.1. As far as the TS requirements for the SFB refueling filter fan are concerned, nothing has been changed. Therefore, the proposed TS 3.8.2.c.1 is acceptable.

With regard to the proposed TS 3.8.2.c.2, the licensee explained in a

telephone conversation with the staff on April 15, 1996, that without the proposed TS changes, the licensee must suspend refueling operations whenever the flow rate of any one of the containment purge filter fans cannot be shown to be within 10 percent of its design flow rate. The licensee pointed out that this poses undue hardship on plant operation. The proposed TS 3.8.2.c.2 requires that one containment purge filter fan, instead of two fans, be shown to operate within the specified flow range of the design flow during refueling operation. In case both purge filter fans are out of service, a containment isolation valve (CIV) will be secured to isolate the flow path.

Currently, TS 3.8.1.i calls for securing at least one automatic CIV in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere, in the event the containment purge system is not in operation during refueling operations. The above requirement is consistent with the added requirement in proposed TS 3.8.2.c.2 when the TS requirements for purge filter fan specified in TS 3.8.2.c.2 are not met. This is consistent with the basis of the current TS 3.8.2, which states that "[d]uring movement of irradiated fuel assemblies in containment, the purge system will be either operable, with exhaust flow passing through HEPA and charcoal filters, or containment isolated." Therefore, the NRC staff finds the added requirement of containment isolation acceptable.

The safety-related CIVs, which include the large purge system butterfly valves, isolate the containment in a very short time (i.e., within a minute) upon containment isolation signal from area radiation monitors during refueling operations. Moreover, the current TS 3.8.1.a requires that the equipment door and at least one door in the air lock be closed and all systems that provide direct path from the containment atmosphere to the outside atmosphere must have either operable automatic CIVs or have at least one valve securely closed in each line penetrating the containment during refueling operations. Additionally, TS 3.8.1.b requires that the containment vent and purge system, including the radiation monitors that initiate containment isolation, shall be tested and verified to be operable immediately prior to refueling operations. For the above reasons, the NRC staff considers that following an FHA inside the containment, the containment will be isolated within a short time (<5 minutes) as assumed in the HBR Updated Final Safety Analysis Report (UFSAR) Table 15.7.4-2. For the FHA inside the containment scenario, the NRC staff considers that once the containment is isolated, further release of radioactive material from the containment to the environment will not occur.

HBR TS 3.8.1.i requires the discharge of purge exhaust through HEPA and charcoal filters whenever the purge system is in operation during refueling. Since each of the two containment fan-filter units contain HEPA filters, charcoal filters and a 100-percent capacity purge filter fan, during refueling any one of the containment fan-filter units is sufficient to discharge the purge exhaust through the HEPA filters and charcoal filters. The adequacy is based on the safety analyses in UFSAR Section 15.7.4, Design Basis Fuel Handling Accidents, in which one fan was assumed in operation until the containment is isolated within 5 minutes. The analyses were performed using the assumption delineated in NRC Safety Guide 25, "Assumption Used For Evaluating The Potential Radiological Consequences Of A Fuel Handling Accident In The Fuel Handling And Storage Facility For Boiling And Pressurized Water Reactors." The analyses for the FHA in containment and in the SFB did not

take credit for atmospheric mixing in the calculation of the off-site dose. The proposed TS changes do not affect the acceptability of the above safety analyses in UFSAR Section 15.7.4. Therefore, the proposed TS 3.8.2.c.2, calling for operability of at least one containment purge filter fan and demonstration of flow rate of the fan within 10% of its design flow rate during core alterations or movement of irradiated fuel assemblies, is acceptable. The staff considers the wording "during core alterations or movement of irradiated fuel assemblies" in the proposed specification TS 3.8.2.c.2 to be a welcome clarification of the refueling operations.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of South Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (60 FR 47615). Accordingly, the amendment meets 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 the amendment.

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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Y. Li

Date: August 6, 1996