

MAR 14 1973

Docket No. 50-261

Carolina Power & Light Company
ATTN: E. E. Utley, Vice President
Bulk Power Supply
336 Fayetteville Street
Raleigh, North Carolina 27602

Change No. 13
DPR No. 23

Gentlemen:

Your letters dated September 27, 1972, January 23, 1973, and February 9, 1973, submitted a proposed change to the Technical Specifications of Operating License No. DPR-23 for the H. B. Robinson Unit No. 2. The proposed change would permit handling irradiated fuel in the Spent Fuel Building providing certain conditions are met, and would also provide a new set of conditions that must be met before handling irradiated fuel in containment.

During a review of your proposed change, we informed your staff certain modifications to your proposal were necessary to meet our regulatory requirements. Those modifications have been made. We conclude that implementation of the proposed change, as modified, will not present significant hazards considerations not described or implicit in the Safety Analysis Report and that there is reasonable assurance that the health and safety of the public will not be endangered.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Operating License No. DPR-23 are hereby changed as indicated in Attachment A.

Sincerely,

isd

Donald J. Skovholt
Assistant Director for
Operating Reactors
Directorate of Licensing

Enclosure:
see next page

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Enclosure:
Attachment A

cc w/enclosure:
George F. Trowbridge, Esquire
Shaw, Pittman, Potts, Trowbridge
and Madden
910 - 17th Street, N. W.
Washington, D. C. 20006

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ATTACHMENT A

CHANGE NO. 13 TO THE TECHNICAL SPECIFICATIONS

OPERATING LICENSE NO. DPR-23

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

1. Delete paragraphs 3.8.1.h and 3.8.1.i. Replace these paragraphs with:

3.8.1.h - Movement of fuel within the core shall not be initiated prior to 100 hours after shutdown.

3.8.1.i - The Spent Fuel Building ventilation system shall be operating when handling irradiated fuel in this area. Prior to moving irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through HEPA and impregnated charcoal filters. When in operation, the exhaust flow of the Containment Purge System shall discharge through HEPA and impregnated charcoal filters. When the containment purge system is not in operation at least one automatic containment isolation valve shall be secured in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere.

2. Add item 16 to Table 4.1-3.

16.	Fans and Associated Charcoal and HEPA Filters for Spent Fuel Building and Containment Purge Exhaust System	Fans functioning at $\geq 75\%$ design flow. DOP and Halon tests at design flows on filters to show $\geq 99.95\%$ DOP removal and $\geq 99.9\%$ Halon removal. Laboratory carbon sample analysis shall demonstrate $\geq 99.5\%$ radioactive methyl Iodide removal at a face velocity of 40 ft/min and one Mg/M^3 inlet iodine concentration.	Initially and at least once/year. In addition, DOP testing is to be performed after each complete or partial replacement of the HEPA filter bank, and Halon testing after each complete or partial replacement of the charcoal filter bank.	N.A.
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3. Delete the last paragraph of the Basis of Section 3.8, p.3.8-3 and replace with:

"The restriction of ~~not~~ moving fuel in the reactor for a period of 100 hours after shutdown reduces the consequences of a fuel handling accident by providing for decay of short-lived fission products and the reduction of fission gas inventory in any potentially failed fuel. Fuel handling accidents in containment and the Spent Fuel Building have been evaluated by postulating that the failure of all fuel rods in one assembly occurs 100 hours after shutdown⁽⁴⁾. During movement of irradiated fuel assemblies in the spent fuel pool, ventilation exhaust is diverted through HEPA and charcoal filters. During 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."

4. Delete reference (4) on page 3.8-3 and replace with:

"(4) Letters - CP&L to AEC: September 27, 1972; January 23, 1973; and February 9, 1973."

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Files (Robinson-2, Docket No. 50-261)
THRU: R. J. Schemel, Chief, OFB #1, L 15)

FUEL HANDLING REQUIREMENTS - TECHNICAL SPECIFICATION CHANGE NO. 13

Background

A difference in the consequences of the fuel handling accident existed between the licensee and Licensing at the time an operating license was granted the Robinson 2 Plant. As a result of this difference, Robinson 2 Technical Specifications did not allow irradiated fuel handling in the Spent Fuel Building and allowed irradiated fuel handling in containment only with ventilation system containment valves closed.

The difference between Licensing and CP&L's evaluation of the fuel handling accident primarily involved:

1. Gap activity and the retention of iodine in water (Licensing Safety Evaluation of 5-8-70, Section 4.2).
2. Whether only 15 fuel rods or the full 204 fuel rods in an assembly are damaged in the accident (page 3.8-3, Robinson 2 Technical Specifications).

By letter of September 26, 1972, CP&L proposed Technical Specifications changes to remove restrictions on handling irradiated fuel. Their revised accident analysis considers failure of 204 fuel rods and takes advantage of pool decontamination of fission gases, as now allowed by Safety Guide 25. Charcoal filters were added to the exhaust ventilation system from the Spent Fuel Building.

Our review revealed certain deficiencies in the proposal, which CP&L corrected in letters submitted January 23, 1973 and February 9, 1973. Chief among the corrections was addition of full flow charcoal filtration to the containment purge system.

Safety Evaluation

The fuel handling accident analyses performed by CP&L has been reviewed and found to be consistent with Safety Guide 25. The charcoal and HEPA filter descriptions and requirements were found to be consistent with the most recently licensed plant. The accident analysis considers failure of all 204 rods of the damaged assembly and considers gap activity and retention of iodine by pool water as allowed by Safety Guide 25, thereby removing differences originally existing between Licensing and CP&L's safety evaluations.

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A 100 hour decay period is required by Technical Specifications before handling fuel. Charcoal filters which have been added to provide iodine removal further reduce exposures. I have performed an independent evaluation and agree with CP&L's conclusion that a fuel handling accident in containment or in the Fuel Storage Building would result in 2-hour exposure at the site boundary of less than 30 Rem thyroid and less than 4 Rem whole body. These doses are well within the guidelines of 10 CFR Part 100, and below the equivalent annual doses for occupational workers as allowed by 10 CFR Part 20. The exposures are based on a building wake factor of 3 with ground level release. The pool decontamination factor, charcoal filter decontamination factor, and diffusion factor are determined as described in Safety Guide 25.

Technical Specifications require that during irradiated fuel handling within containment, the containment purge system must be operating or containment isolated. In the event of a fuel handling accident with containment isolated, a small amount of fission gas could be released from containment when operation personnel exited containment via the airlock. The activity released each time the airlock was opened would be much less than if the purge system were operating, because the volume ratio of the airlock to containment is 5×10^{-4} .

The Technical Specifications require that prior to irradiated fuel handling in the Spent Fuel Building, the ventilation system will be aligned to discharge through charcoal filters. All discharge flow should pass through the charcoal filters because the discharge pressure from fan HVE15B prevents flow via dampers D2 and D4 (see Figure 1) from bypassing the charcoal filter.

Charcoal and HEPA filter testing is required initially and at least once per year. In addition testing is required following filter replacement. The requirement for DOP testing of HEPA filters has been set at 99.95% efficiency, and a requirement for carbon sample analyses to show 99.5% efficiency for radioactive methyl iodide (laboratory test). Halon testing of charcoal filters to 99.9% is required. These changes bring Robinson filter testing up to at least the level required for the most recently licensed plants.

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Conclusions

I conclude that implementation of Technical Specification Change No. 13 will not present significant hazards considerations not described or implicit in the Safety Analysis Report, and that there is reasonable assurance that the health and safety of the public will not be endangered.

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V. L. Rooney
Operating Reactors Branch #1
Directorate of Licensing

- cc: D. J. Skovholt
- T. J. Carter
- R. J. Schemel
- V. L. Rooney
- S. A. Teets
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