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John F. O'Leary	1 signed			X	X

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	X	1	50-261

DESCRIPTION:
Ltr requesting Change in Tech Specs to auth handling of irradiated fuel....trans the following:

PLANT NAMES: H. B. Robinson, Unit # 2

ENCLOSURES:
ENCL # 1 - Evaluation of Fuel-Handling Accidents at H. B. Robinson, Unit # 2 and including Table 1.

ACKNOWLEDGED DO NOT REMOVE

(1 cy rec'd)

FOR ACTION/INFORMATION 10-3-72 fod

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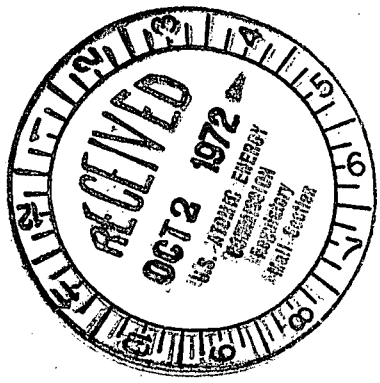
Carolina Power & Light Company

Raleigh, North Carolina 27602

September 27, 1972



Mr. John F. O'Leary
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

50-261

Regulatory File Cy.

H. B. ROBINSON UNIT NO. 2
LICENSE DPR-23
REFUELING OPERATIONS

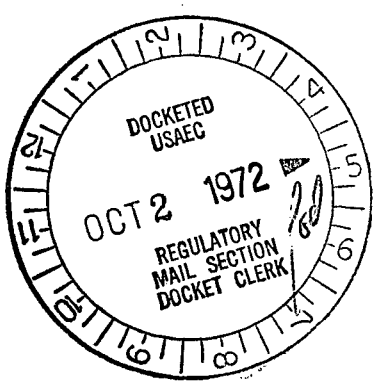
Dear Mr. O'Leary:

H. B. Robinson Technical Specifications 3.8.1.i. stipulates that, "Irradiated fuel shall not be handled outside containment unless authorized by the AEC." The basis for this technical specification states that, pending completion of the evaluation of a fuel-handling accident, which postulates the failure of all the fuel rods in an assembly, irradiated fuel will not be handled in the Spent Fuel Building.

Pursuant to the above, a revised evaluation of a fuel-handling accident at H. B. Robinson has been completed, postulating the failure of all the fuel rods in one assembly. This revised evaluation is included in Enclosure 1. Charcoal filters have been designed and will be installed to treat the ventilation exhaust from the Spent Fuel Building; these filters will be in operation whenever individual irradiated fuel assemblies are being moved.

Based on the enclosed evaluation of fuel-handling accidents, it is requested that the H. B. Robinson Technical Specifications be changed as follows to permit handling of irradiated fuel:

SECTION	REQUESTED CHANGE
Specification 3.8.1.h.	Delete this paragraph and replace with the following: "Movement of fuel within the core shall not be initiated prior to 100 hours after shutdown."
Specification 3.8.1.i.	Delete this paragraph and replace with the following: "The Spent Fuel Building ventilation system shall be operating when handling irradiated fuel in this area. Prior to moving individual irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through charcoal filters."



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Basis of Section 3.8, p. 3.8-3	Delete the last paragraph and replace with the following: "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 the decay of short-lived fission products and the reduction of fission gas inventory in any potentially failed fuel. Fuel-handling accidents in the Containment and 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 individual irradiated fuel assemblies in the spent fuel pool, ventilation exhaust is diverted through HEPA and charcoal filters."
References for Basis of Section 3.8, p. 3.8-3	Delete Reference (4) and replace with "(4) CP&L letter to AEC dated September 27, 1972."

Yours very truly,

E. E. Utley
Vice President
Bulk Power Supply

SRZ/dkm

Enclosure

Enclosure (1)

EVALUATION OF FUEL-HANDLING ACCIDENTS AT H. B. ROBINSON, UNIT NO. 2

This evaluation assumes that a fuel assembly is dropped during fuel-handling operations. Interlocks, equipment design, and operating procedures make such an event highly unlikely; however, if an assembly were damaged to the extent that one or more fuel rods were ruptured, the accumulated fission gases in the fuel rod gap would be released to the surrounding water.

The evaluation was conducted using the highly conservative assumption that all fuel rods, in the assembly which produced the most power in the core, are ruptured as a result of dropping the assembly. The fission products within the assembly are assumed to have decayed for a period of 100 hours following shutdown, after the plant had been operating at 2300 MWt. The radial peaking factor is assumed to be 1.65. Table 1 shows the total core fission product inventories per megawatt thermal at the time of the postulated handling accident, and the gap fractions of each isotope. The core contains a total of 157 fuel assemblies.

With respect to the postulated accident occurring inside the containment, the following was assumed:

1. All the activity is released into the upper half of the containment (a volume of $1.55 \times 10^6 ft^3$).

2. One containment supply fan and one containment exhaust fan is operating at a flow rate of 35,000 CFM at the time of the accident.

3. The containment is automatically isolated five minutes after the accident.

With respect to the postulated accident occurring within the Spent Fuel Building, the following was assumed:

1. All activity released to the Spent Fuel Building is exhausted through charcoal filters.

A χ/q value of $8.70 \times 10^{-4} sec/m^3$ was used in calculating site boundary doses. All other assumptions were made in accordance with the Regulatory Position stated in Safety Guide 25.

The resulting 2-hour exposures at the site boundary in the case of the postulated accident occurring within the containment would be:

Thyroid: 21.4 rem

Whole Body: 0.358 rem

The resulting 2-hour exposures at the site boundary in the case of the postulated accident occurring within the Spent Fuel Building would be:

Thyroid: 29.3 rem

Whole Body: 3.17 rem

TABLE 1

H. B. ROBINSON - ISOTOPIC DATA

Isotope	Core Inventory Curies/MWT	Gap Fraction
I-131	2.51×10^{4}	0.10
I-132	3.81×10^{4}	0.10
I-133	5.63×10^{4}	0.10
I-134	6.58×10^{4}	0.10
I-135	5.10×10^{4}	0.10
Xe-133M	1.36×10^{3}	0.10
Xe-133	5.60×10^{4}	0.10
Xe-135	2.74×10^{4}	0.10
Kr-85M	1.095×10^{4}	0.10
Kr-85	3.41×10^{2}	0.30
Kr-87	2.12×10^{4}	0.10
Kr-88	3.05×10^{4}	0.10