

Docket No. 50-261

July 30, 1985

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Mr. E. E. Utley, Senior Executive Vice President
 Power Supply and Engineering & Construction
 Carolina Power and Light Company
 Post Office Box 1551
 Raleigh, North Carolina 27602

Dear Mr. Utley:

SUBJECT: H. B. ROBINSON UNIT 2 - NUREG-0737 ITEM NO. III.D.3.4,
 "CONTROL OF ROOM HABITABILITY", (TAC NO. 46478)

We have completed our review of your responses to the subject NUREG-0737 Item regarding "Control Room Habitability". We find that under certain conditions, the control room environment may exceed toxic limits. The onset to the limits is slow and human responses to the chemicals in question (acetone and isopropyl alcohol) is mild eye irritation. We have recommended to your staff that operating procedures be established requiring control room operation to take protective measures when eye irritation occurs. By letter dated June 7, 1985, your staff committed to the recommendation. Based on your submittals and commitments contained in the SER we find that the control room habitability system will provide adequate protection against design basis accidents including radiological and toxic gas releases; therefore, consider this item closed.

A copy of our safety evaluation is enclosed for your information.

Sincerely,

/s/SVarga

Steven A. Varga, Chief
 Operating Reactors Branch #1
 Division of Licensing

Enclosure:
 As stated

cc w/enclosure:
 See next page

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Mr. E. E. Utley
Carolina Power & Light Company

H. B. Robinson 2

cc:

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

SAFETY EVALUATION
H.B. ROBINSON UNIT 2
DOCKET NO. 50-261
NUREG-0737 ITEM III.D.3.4, "CONTROL ROOM HABITABILITY"

POSITION

In accordance with Task Action Plan Item III.D.3.4, "Control Room Habitability," licensee shall assure that control room operators will be adequately protected against the effects of accidental releases of toxic and radioactive gases and that the nuclear power plant can be safely operated or shut down under design basis accident conditions (Criterion 19, "Control Room," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50).

STAFF EVALUATION

In response to the requirements of the Task Action Plan as promulgated in NUREG-0737, the licensee submitted responses relative to Item III.D.3.4 on December 31, 1980, June 2, 1983, November 4, 1983, April 20, 1984 and June 7, 1985. The staff evaluated the licensee submittals using the guidance and criteria of Standard Review Plan Section 2.2.1, 2.2.2, 2.2.3, and 6.4, and Regulatory Guides 1.78 and 1.95.

In its submittals, the licensee committed to modifications and evaluations needed to meet the current regulatory requirements for control room habitability following design basis accidents, single failure criteria of habitability systems, and protection against toxic chemicals. The commitments are as follows:

- (1) Modification will be performed on the control room HVAC System to reduce the unfiltered inleakage.
- (2) A new redundant air-handling and cooling unit will be added to the existing HVAC System for single failure protection.

- (3) A survey of chemicals trucked over Route 151 will be performed. If any toxic chemicals are identified, a probabilistic risk assessment will be performed to determine the need for a control room toxic gas detector and isolation requirements.

The emergency filter trains are designed to activate automatically following high radiation signal from a control room radiation monitor or from a safety injection signal. The technical specifications require iodine removal efficiencies of 99% particulate, 99% elemental and 90% organic. The system is rated at 5000 CFM of which up to 540 CFM is outside air for pressurization. The rest is recirculated air.

By letter dated December 28, 1984, the licensee submitted the results of their toxic chemical survey, their assessment of the need to provide gas detectors and the corresponding Technical Specifications for the control room. The staff has evaluated this submittal using the guidance and criteria previously referenced.

The licensee identified bulk chemical shipments along South Carolina Highway 151 (which passes 600 meters from the control room air intake) consisting of gasoline, sodium hydroxide solution, #6 crude oil, cutting oils, isopropyl alcohol, acetone, liquid nitrogen, LNG, LPG, sulfuric acid and petroleum naphtha. They also provided the results of their deterministic analysis (in lieu of a probabilistic risk assessment), concluding that the chemicals being shipped near the H.B. Robinson Unit 2 (HBR 2) do not present a toxic hazard to the control room.

We have analyzed the chemicals identified by the licensee as being shipped in bulk quantities in the vicinity of HBR 2, with respect to potential spills. Our findings, while in general agreement with the licensee regarding the concentrations at the control room air intake, indicate that (under

5% meteorology conditions of 0.4 meters per second wind speed and Pasquill-F stability class) the control room environment may exceed toxic limits. Since this condition, if it should occur, does not occur rapidly and since early human responses to the chemicals in question (acetone and isopropyl alcohol) is a mild eye irritation it is recommended that operating procedures be established requiring that control room operators take protective measures when eye irritation occurs. The licensee by letter dated June 7, 1985 has committed to this.

Although CP&L did not evaluate the explosive hazards associated with the materials transported along South Carolina Highway 151, they did identify several materials which could present a hazard of this type. We have examined the overpressures associated with potential explosions of these materials. Our evaluation indicates that there is no undue risk to the plant.

Based on the submittals, implementation of the licensee's proposed modifications, and the satisfactory resolution of the open item on the protection of operators against the effects of offsite toxic gas release, the staff concludes that the control room habitability system will provide adequate protection against design basis accidents including radiological and toxic gas releases in accordance with the requirements of NUREG-0737, Item III.D.3.4 and General Design Criterion 19. Therefore, we consider NUREG-0737 Item III.D.3.4, "Control Room Habitability", closed.