

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
CAROLINA POWER AND LIGHT COMPANY)	Docket No. 50-261
)	
(H. B. Robinson Unit No. 2))	

EXEMPTION

I.

The Carolina Power and Light Company (the licensee) is the holder of Facility Operating License No. DPR-23 which authorizes operation of the H. B. Robinson Plant, Unit No. 2. This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

The facility is a pressurized water reactor at the licensee's site located in Darlington County, South Carolina.

II.

On November 19, 1980, the Commission published a revised Section 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants (45 FR 76602). The revised Section 50.48 and Appendix R became effective on February 17, 1981. Section 50.48(c) established the schedules for satisfying the provisions of Appendix R. Section III of Appendix R contains fifteen subsections, lettered A through O, each of which specifies requirements for a particular aspect of the fire protection features at a nuclear power plant. One of these fifteen subsections III.0 is the subject of this exemption request. III.0 specifies detailed requirements for oil collection system for reactor coolant pumps.

III.

By letter dated November 16, 1980, the licensee informed the staff that installation of a fixed fire suppression system had been completed in each reactor coolant pump bay. The system was based on proposed NRC requirements set forth in Section III.P of a proposed Appendix R notice in the Federal Register on May 29, 1980. Additional information was provided by letter dated November 26, 1980. By letter dated January 19, 1981, the licensee requested an exemption from the requirements of Section III.0 of Appendix R to 10 CFR 50. The request was supplemented by letters dated January 7, 1983, July 30, 1982, June 7, 1983, June 29, 1983 and October 5, 1983. The June 7, 1983, and October 5, 1983 letters proposed modifications for additional fire suppression as alternatives. This does not meet the technical requirements of Appendix R because oil collection systems for the reactor coolant pumps are not provided. The acceptability of the alternative measures are discussed below.

IV.

The containment contains three reactor coolant pumps (A, B and C). These are located in bays (A, B and C). These bays also contain safety related cabling for the reactor coolant loop instrumentation. Bays A and B share a common ceiling; Bay C is isolated from Bays A & B to some extent. The bays are covered by removable concrete blocks. These blocks will cause the plume from an unmitigated fire to be diverted through the steam generator area. This area contains safety related steam flow instrumentation sensing lines.

Oil spilled in Bay A, will be confined to Bay A; however, oil spilled in Bays B and C can flow to adjacent areas. The foundation for the reactor

coolant pumps is at the 237.000' level. The foundation for the steam generators is at the 238.33' level. The reactor coolant pump is located between the pressurized portion of the oil system and the steam generator supports, and serves to shield the steam generator supports in the event of an oil system rupture.

The major combustible in each bay is the 200 gallons of oil in each reactor coolant pump.

The existing fire detection system in each reactor coolant pump bay is a two-zone detection system. One zone consists of a single infrared flame detector; the other zone consists of a 325°F fixed-temperature heat detector. Activation of one zone of detection sends an alarm to the control room; activation of the second zone of detection alarms in the control room and also opens the preaction water deluge valve to the bay. Both detectors are wall mounted.

The existing fire suppression system for each bay, is a preaction sprinkler system. Each bay has its own deluge valve, supply header, and a ring header that encircles the reactor coolant pumps at elevation 239 feet 4 inches. Each of the five risers off the ring header have three 220°F closed head side wall sprinklers at approximately 240 feet, 245 feet and 252 feet elevations. These systems are design to meet the minimum residual pressure and flow requirements of NFPA-Std-15.

The suppression system ring header piping in Bay A is designed to withstand an SSE, while Bays B and C are designed such that a seismic event would not impact safety related equipment due to suppression system rupture. The risers are restrained to withstand the nozzle reaction forces. These forces are greater than those anticipated from a seismic event.

The existing containment spray system would be used as an emergency back-up to the bay suppression system if necessary to cool the operating level and containment annulus outside of the RCP bays.

By letter dated June 7, 1983, the licensee proposed to:

- (1) Provide additional ceiling mounted heat detectors to meet the spacing and location requirements of NFPA-STD-72E, "Standard on Automatic Fire Detectors.
- (2) Replace existing closed head sprinklers with special open water spray nozzles and manual actuation from the control room.
- (3) Construct 6 inch dikes at the 231 feet elevation in Bay B and Bay C.
- (4) Revise operating procedures for the containment spray system to allow its operation as a back up fire suppression system with the sodium hydroxide valves out.

By letter dated October 5, 1983, the licensee committed to maintain an automatically actuated closed-head preaction system in lieu of a manually actuated open-head system.

We have evaluated the fire protection for the reactor coolant pump lube oil system and conclude that the effects of a fire in an RCP Bay will not prevent safe shutdown capability. There are no components within the RCP Bay that are required for safe shutdown. The effects of any fire within an RCP Bay will be prevented from affecting the safe shutdown equipment outside the RCP Bay by the suppression system inside the RCP Bay and the Containment Spray System outside the Bay.

It is the staff's conclusion that: 1) installation of a reactor coolant pump oil collection system in this facility would not significantly enhance fire safety, and 2) the existing fire protection system in the Reactor Coolant

Pump Bays with the addition of the proposed modifications provides an acceptable level of safety to that achieved by compliance with the requirements of Section III.0 of Appendix R to 10 CFR 50. Therefore, the licensee's request for an exemption should be granted.

V.

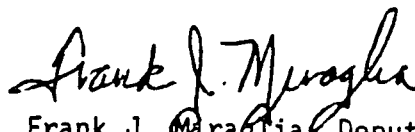
Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, the exemption requested by licensee's letters as referenced and discussed in III. and IV. above is authorized by law, will not endanger life or property or the common defense and security, is otherwise in the public interest, and is hereby granted.

Pursuant to 10 CFR 51.32, the Commission has determined that the issuance of the exemption will have no significant impact on the environment (50 FR 10124, March 13, 1985).

A copy of the Safety Evaluation dated March 7, 1985, related to this action is available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the local public document room located at the Hartsville Memorial Library, Home and Fifth Avenues, Hartsville, South Carolina 29535. A copy may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Frank J. Miraglia, Deputy Director
Division of Licensing
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 20th day of March, 1985