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SUBJECT: Special rept: on 950412, one of two containment range radiation monitors, R-32B, was removed from svc for performance of calibr check.

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TS 3.5-5

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Robinson File No.: 13510C
Serial: RNP-RA/95-0079

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U. S. Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
14-DAY SPECIAL REPORT - CONTAINMENT HIGH RANGE RADIATION MONITORS
WITH LESS THAN REQUIRED NUMBER OF CHANNELS OPERABLE

Gentlemen:

In accordance with the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications Table 3.5-5, Note 4, Carolina Power & Light Company submits the enclosed Special Report which is due by May 3, 1995.

If you have any questions, please contact Mr. Keith R. Jury at (803) 857-1363.

Very truly yours,

R. M. Krich
Manager, Regulatory Affairs

SAB:sb
Enclosure

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Background

The H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 Technical Specifications (TS), Section 3.5, "Instrumentation System," Table 3.5-5, "Instrumentation to Follow the Course of an Accident," Item No. 8, requires a minimum of two channels of Containment High Range Radiation Monitors to be operable. TS Table 3.5-5, Notes 4, states, "With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, restore the inoperable Channel(s) to OPERABLE status within 7 days or, prepare and submit a Special Report to the NRC within the following 14 days detailing the cause of the inoperable Channel(s), the action being taken to restore the Channel(s) to operable status, the estimated date for completion of repairs, and any compensatory action being taken while the Channel(s) is inoperable."

As committed to in the HBRSEP, Unit No. 2 Updated Final Safety Analysis Report (UFSAR), Regulatory Guide (RG) 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Revision 3, Table 3, Note 8, recommends, "... a dose rate response accuracy within a factor of 2 over the entire range" for Containment High Range Radiation Monitors.

On April 12, 1995, one of the two Containment High Range Radiation Monitors, R-32B, was removed from service for the performance of a calibration check. The source check portion of the calibration failed to meet the requirements for operability in that the accuracy of the low range indication of the R-32B radiation monitor failed to conform to the recommendations of RG 1.97.

In 1993, following a modification which included re-routing of some cables, including those for the R-32B radiation monitor, inside Containment Penetrations, R-32B began to spike and generate alarms whenever one or both Heating Ventilation Recirculation units HVH-1 and HVH-4 started. An evaluation was conducted to assess the effects of an improperly routed R-32B signal cable. As a result, an operator aide was implemented to inform Control Room operators that a signal spike may be detected by the R-32B radiation monitor whenever HVH-1 and/or HVH-4 start. At that time, we determined that the signal spikes detected by the R-32B radiation monitor while the HVH-1 and HVH-4 units were starting were spurious and had no additional effects on the monitor. This evaluation did not determine the actual effects on the monitoring capabilities of the R-32B radiation monitor with the HVH-1 and/or HVH-4 units operating. The actual effects were discovered on April 12, 1995, when a calibration was performed on the R-32B radiation monitor for the first time while the plant and HVH units 1 and 4 were operating. In the past, this calibration had only been performed while the plant was shutdown and, consequently, these HVH units were not operating.

Cause of Inoperable Channel

Our preliminary investigation indicates that the signal to the R-32B radiation monitor becomes degraded when one or both of the HVH units are running. The modification which re-routed cables inside the containment penetrations may have resulted in the R-32B radiation monitor signal cable being positioned too close to the HVH-1 and HVH-4 480 VAC power supply cables. Also, the signal cable for the R-32B radiation monitor is routed within the same cable trays as the power supply cables for HVH-1 and HVH-4.

Actions to Restore Channel to Operable

We have concluded that a modification is necessary to confirm and correct the R-32B radiation monitor, HVH-1, and HVH-4 cable configuration concerns. This modification will be implemented during Refueling Outage 16, which began on April 29, 1995. Post-modification testing with HVH-1 and/or HVH-4 running will be performed one week prior to the reactor coolant system going above 200°F during startup from the current refueling outage. Since the plant is currently shutdown for refueling, the R-32B radiation monitor is not required to be operable when the reactor coolant system temperature is less than 350°F.

Estimated Date for Completion of Repairs

Design and implementation of the actions expected to restore the R-32B radiation monitor to operable status are scheduled to be completed by the time the plant is returned to service.

Compensatory Actions While Channel is Inoperable

The following compensatory measures were taken during the period April 12, 1995, through April 30, 1995, at which time the reactor coolant system temperature was cooled below 350°F.

The redundant radiation monitor, R-32A, "Containment High Range Radiation Monitor," was removed from service on April 21, 1995, for the performance of a similar calibration check. Results of the calibration demonstrate that this monitor is operable. Therefore, one of the two required Containment High Range Radiation Monitors provided high range radiation indication in the unlikely event of an accident. Also, Containment Area Monitor R-2 and Incore Instrument Room Monitor R-7 provided containment monitoring up to 10 Rem (R), and the R-32B radiation monitor was considered to be functional, and at higher radiation values (i.e., approximately 100R), provided accurate indication within the RG 1.97 recommended range.

As stated above, the R-32B radiation monitor is not required to be operable while the plant is currently shutdown for refueling; therefore, no compensatory measures are being taken.