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 FACIL: 50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Light 05000261
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 VARGA, S.A. Operating Reactors Branch 1

SUBJECT: Responds to NRC 83051 request for addl info re final steam generator repair rept. Polar crane to be modified to make special heavy lifts required during steam generator replacement.

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Carolina Power & Light Company

JUL 11 1983

SERIAL: LAP-83-256

Director of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
REQUEST FOR ADDITIONAL INFORMATION
"FINAL" STEAM GENERATOR REPAIR REPORT

Dear Mr. Varga:

Please find attached Carolina Power & Light Company's (CP&L) response to your request for additional information telecopied to CP&L on May 11, 1983 regarding the "Final" Steam Generator Repair Report for the H. B. Robinson Steam Electric Plant Unit No. 2.

Should you have any questions regarding this transmittal, please contact a member of my staff.

Yours very truly,

S. R. Zimmerman
Manager
Licensing & Permits

AWS/ccc (7138NLU)

Attachment

cc: Mr. J. P. O'Reilly (NRC-R11)
Mr. G. Requa (NRC)
Mr. George F. Trowbridge, P.C.
Mr. Steve Weise (NRC-HBR)

Adol
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Question

1. Verify that no work regarding the steam generator repair will be undertaken until all fuel is removed from the reactor vessel and placed within the spent fuel pool, and the reactor coolant loops drained. Thus, any consequences from a load drop would be of an economic nature and not a radiological safety concern.

CP&L Response

As stated in the "Final" Steam Generator Repair Report Section 5.2.1.1 and by letter to the NRC dated June 3, 1983 regarding NRC request for additional information:

Heavy load handling activities for the steam generator replacement will not begin until all the fuel has been removed from the containment and stored in the spent fuel pool. In addition, the reactor cavity will be drained, the reactor head will be placed on the reactor vessel, the missile shield will be put in place, double isolation will be achieved between the reactor cavity and the spent fuel pit, and the primary system piping within the postulated steam generator lower assembly drop zone will be drained and inoperable.

Question

2. Verify the following:
 - a. Special heavy lifts during the steam generator repair project will meet the guidelines of ANSI B30.2.0-1976, Section 2-3.2.1, concerning handling of special heavy lifts.
 - b. Records of special heavy lifts will be maintained in project records as part of the steam generator repair program.
 - c. The polar crane will be inspected in accordance with ANSI B30.2.0-1976 Section 2-2 guidelines after completion of the steam generator repair project, and prior to returning the crane to normal service.

CP&L Response

- a. The H. B. Robinson Polar Crane is to be modified to make the special heavy lifts required during the replacement of the Unit No. 2 steam generators. Although the crane is to be upgraded/modified to a temporary capacity of 210 tons, the nameplate rating (155 tons) will not be changed. Following the steam generator replacement project, the polar crane will retain its main hook nameplate rating of 155 tons.

Section 2-3.2.1 of ANSI B30.2.0-1976, deals with loading a crane beyond its rated load for test purposes and special heavy lifts. The removal and replacement of the three (3) steam generator lower assemblies is defined as "one special lift."

Prior to making the "one special lift", the available (H. B. Robinson vault) maintenance history of the polar crane, including any reports of prior special lifts, will be reviewed and evaluated.

The structural, mechanical, and electrical components of the crane were checked on July 15, 1982, by a representative of the crane manufacturer (The Whiting Corporation). This inspection was carried out according to accepted crane design standards (such as CMAA#70) and prior to the rerating analysis performed by the Whiting Corporation. The Whiting Corporation rerate analysis for the temporary upgrade utilized CMAA#70-1975 criteria and crane loading restrictions imposed by CP&L.

The crane supporting structure (the crane wall/secondary shield wall, located inside of the containment building) was evaluated by Ebasco Services, the original plant architect/engineer. This study evaluated the effect of the increased wheel loadings on the containment polar crane wall and foundations along with the added effects of possible steam dome sitdown loads. The results indicated that the structure is adequate to withstand the loads imposed. The weight of the steam dome sitdown loads will not be imposed on the crane wall as the steam domes are to be removed from containment.

Prior to the "one special lift", inspection of the modified/temporarily upgraded polar crane will be performed in accordance with ANSI B30.2.0-1976 Section 2-2.1.3 but without disassembly of the crane parts involved in the crane modification.

It is planned to obtain the services of a representative of the crane manufacturer during the implementation of the polar crane modifications and subsequently to retain a representative for assistance in making the crane inspection, as described above.

Lifting of the steam generator lower assemblies will be made in accordance with written instructions for following the appropriate requirements of Section 2-3.2 of ANSI B30.2.0-1976.

- b. As the six steam generator lower assemblies will all be handled within a relatively short period of time, the polar crane lifts will be treated as "one special lift." However, a log containing the date, time, distance moved, and remarks of each lift will be created and maintained. All special heavy lift records generated will be maintained as part of the plant modification documentation.
- c. At the completion of the steam generator repair project, and prior to returning the crane to normal service, a general visual inspection of the crane will be made. This inspection will be in accordance with ANSI B30.2.0-1976 Section 2-2.1.3. However, the crane parts will not be disassembled for the inspection. An

Operational Test in accordance with Section 2-2.2.1 will also be performed. Records of the inspection and test will be made and retained.

Question

3. The licensee has indicated that the main feed ring will be replaced as part of the steam generator repair program. Verify that the feedwater system will remain the same in order for us to evaluate the potential for unacceptable steam generator waterhammer and the need for a waterhammer test specified in Branch Technical Position ASB 10-2 as part of the return to service testing.

CP&L Response

The modifications to be made to the feedwater system include removal and reinstallation of a segment of feedwater piping external to the steam generator (so the steam generator can be removed), and replacement of the steam generator feedring, thermal sleeve between the feedring and shell nozzle, a short segment of the feedwater nozzle, and the feedring supports. The new feedring assembly will have "J" nozzles which will provide a top discharge of the feedwater after installation. These "J" nozzles will prevent draining of the feedring, if the water level drops below the level of the feedring.

The feedwater piping immediately external to all three steam generators has a horizontal length of about 3 feet, 6 inches and then turns downward for a distance of about 20 feet. Following replacement of the steam generator lower assemblies and reinstallation of the steam domes, it is intended to restore the feedwater piping to its pre-replacement configuration.

The replacement project will improve the steam generator feedwater system by reducing the potential for water hammer, satisfying the guidelines of Branch Technical Position ASB 10-2 and there is no need for any feedwater waterhammer testing.