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SUBJECT: Submits final response to NRC Bulletin 88-011, "Pressurizer Surge Line Thermal Stratification."

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO.50-261/LICENSE NO. DPR-23
FINAL RESPONSE TO NRC BULLETIN NO. 88-11
"PRESSURIZER SURGE LINE THERMAL STRATIFICATION"

Gentlemen:

NRC Bulletin No. 88-11, "Pressurizer Surge Line Thermal Stratification," was issued dated December 20, 1988. The Bulletin requested pressurized water reactor licensees to perform a visual inspection during cold shutdown, to demonstrate that the pressurizer surge line meets applicable design codes and other regulatory commitments for the licensed life of the plant, to obtain plant specific data on thermal stratification, thermal striping, and line deflections if compliance with the applicable codes and commitments cannot be demonstrated, and to update the stress and fatigue analyses to ensure compliance with applicable design requirements taking into account the results of the requested visual inspections. The purpose of this letter is to provide notification of the completion of analyses that confirm that surge line stresses are within allowable limits.

By letter dated February 27, 1989, we described our participation in a Westinghouse Owners Group (WOG) program to resolve the concerns delineated in the Bulletin and requested an alternate schedule to perform the requested actions, in accordance with Reporting Requirement 2 of the Bulletin. By letter dated May 30, 1989, we provided a justification for continued operation for at least ten additional heatup/cooldown cycles in support of our alternate schedule. By letter dated December 7, 1990, we notified the NRC that the WOG program had failed to demonstrate full compliance for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, and provided a schedule for the performance of a plant specific analysis.

By letter dated July 3, 1991, we informed the NRC of the need to perform additional analyses using "generic" industry data, and described our plans for installation of pressurizer surge line instrumentation should this become necessary to verify the applicability of the industry data

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used in the plant specific analysis. We committed to install the instrumentation during Refueling Outage 14, in the Spring of 1992, if necessary, and to provide a determination of the applicability to the industry data after collecting data for at least one Reactor Coolant System (RCS) heatup and one RCS cooldown. By letter dated January 30, 1992, we informed the NRC that the plant specific reanalysis had been completed and demonstrated that the HBRSEP, Unit No. 2 pressurizer surge line piping meets applicable American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements for the life of the plant. However, we informed the NRC that the stress analysis showed the need to modify three of the pressurizer surge line spring can supports. This modification was completed during Refueling Outage 14, in the Spring of 1992. We also identified the need to install pressurizer surge line instrumentation to verify the applicability of the industry data used in the analysis and committed to complete the resolution of the applicability of the data within three months after the commencement of Refueling Outage 15, in the Fall of 1993. By letter dated January 13, 1994, we notified you of a delay in the submittal of the confirmation of the analysis due to software problems that we had experienced with the pressurizer surge line instrumentation data acquisition system. We committed to provide a confirmation of the applicability of the analyses seven months after the start of Refueling Outage 16, which began on April 28, 1995; that is, by November 28, 1995.

Sufficient data was obtained during Refueling Outage 16 for completion of the NRC Bulletin No. 88-11 requested actions. The analytical approach taken was to review the HBRSEP, Unit No. 2 plant specific surge line monitoring data to determine the temperature profile loading and compare to the profile used in the analysis using industry data. Since the measured temperature loading profile was not determined to be less severe than the profile used in the analysis, a stress analysis was performed using the HBRSEP, Unit No. 2 data as input. The resulting stresses were compared to the previously analyzed stresses and determined to be more severe than the loadings resulting from the analysis using the industry data, and a fatigue evaluation was performed using the stresses derived from the HBRSEP, Unit No. 2 data as input.

The reanalysis considered the concerns expressed in NRC Bulletin No. 88-11, and has concluded that the HBRSEP, Unit No. 2 pressurizer surge line meets the requirements of the ASME Code, Section III, including both stress limits and fatigue usage for the licensed life of the plant. The analyses will be maintained in accordance with the applicable criteria of 10 CFR 50, Appendix B and plant procedures as requested by Action 3 of the Bulletin and are available for inspection.

Questions regarding this matter may be referred to me at (803) 857-1802.

Very truly yours,

R. M. Krich
Manager - Regulatory Affairs

Enclosure
JSK/klb
c: Mr. S. D. Ebneter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. W. T. Orders, USNRC Senior Resident Inspector, HBRSEP

Affidavit

State of South Carolina
County of Darlington

C. S. Hinnant, having been first duly sworn, did depose and say that the information contained in letter RNP-RA/95-0211 is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

C S Hinnant

Sworn to and subscribed before me

this 27 day of NOVEMBER 1995

(Seal) Roger David Jacks
Notary Public for South Carolina

My commission expires: MARCH 21, 2005