

November 20, 2001

Mr. J. W. Moyer, Vice President
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

SUBJECT: CLOSEOUT OF NRC BULLETIN 2001-01, "CIRCUMFERENTIAL CRACKING OF REACTOR PRESSURE VESSEL HEAD PENETRATION NOZZLES," RESPONSES FOR H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (TAC NO. MB2654)

Dear Mr.Moyer:

On August 3, 2001, the staff issued NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," to the industry requesting that addressees provide information related to the structural integrity of the reactor pressure vessel head penetration (VHP) nozzles for their respective facilities, including the extent of VHP nozzle leakage and cracking that has been found to date, the inspections and repairs that have been undertaken to satisfy applicable regulatory requirements, and the basis for concluding that their plans for future inspections will ensure compliance with applicable regulatory requirements at their respective pressurized-water reactor plants. You were requested to respond to Items 1 and 3 of the Bulletin within 30 days of its issuance.

By letter dated September 4, 2001, you provided your response to the Bulletin, indicating that H. B. Robinson, Unit No. 2, is in the category of plants considered as having high susceptibility to VHP nozzle cracking, based on a relative susceptibility ranking of less than five effective full-power years from the Oconee Nuclear Station, Unit 3, condition. This response was supplemented by letters dated October 2, October 19, November 2, and November 12, 2001. The November 2, 2001, submittal was in response to the NRC staff's request for additional information dated October 26, 2001. In addition, the NRC staff and H. B. Robinson representatives held a telephone conference on October 11, 2001, and a meeting on October 24, 2001.

Based on our review of the information provided in your Bulletin response and its supplements, the staff has concluded that your April 2001 inspection was performed as a "qualified visual examination" in accordance with the description for such an examination provided in Bulletin 2001-01. This staff finding is based on the information you provided regarding the fabrication process used for installation of the nozzles, along with the results of finite element analyses from Structural Integrity Associates and Dominion Engineering. From the information that you provided, the staff has concluded that there is a reasonable likelihood that the interference fits associated with the VHP nozzles in the upper head of the H. B. Robinson, Unit No. 2, reactor vessel will provide a leakage path to the reactor pressure vessel (RPV) head surface under the temperature and pressure operating conditions for the plant. Further, your description of the visual examination performed at H. B. Robinson, Unit No. 2, in April 2001 provides reasonable

assurance that any leakage from VHP nozzle through-wall cracking would be detected by the visual examination performed on the RPV head surface. Therefore, the staff concludes that the visual examination of the VHP nozzles performed at H. B. Robinson, Unit No. 2, in April 2001 provides reasonable assurance of the structural integrity of the VHP nozzles until the next inspection scheduled for the fall 2002 outage of the plant.

As discussed above, the staff has concluded that there is reasonable assurance that the public health and safety will be maintained. Your proposed inspection scope and schedule described in your response, which included the description of your plan to examine 100 percent of the VHPs at Robinson, Unit No. 2, during its scheduled refueling outage in the fall of 2002, were integral to the staff's finding. It is the staff's expectation that you will submit a revised response to the Bulletin if you make any substantive changes to the schedule and/or scope of future inspections for your plant. If warranted by such changes, the staff will reevaluate this issue for H. B. Robinson, Unit No. 2.

Addressees are reminded that Item 5 of the Bulletin requested the following information within 30 days after plant restart following the next refueling outage:

- a. a description of the extent of VHP nozzle leakage and cracking detected at your plant, including the number, location, size, and nature of each crack detected;
- b. if cracking is identified, a description of the inspections (type, scope, qualification requirements, and acceptance criteria), repairs, and other corrective actions you have taken to satisfy applicable regulatory requirements. This information is requested only if there are any changes from prior information submitted in accordance with this Bulletin.

Sincerely,

/RA/

Kahtan N. Jabbour, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-261

cc: See next page

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Sincerely,

/RA/

Kahtan N. Jabbour, Senior Project Manager, Section 2
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