

November 17, 2000

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

SUBJECT: INSERVICE INSPECTION REQUEST FOR RELIEF NO. 28 FROM ASME CODE, SECTION XI REQUIREMENTS FOR LARGE VALVES DURING THIRD 10-YEAR INSPECTION INTERVAL; H. B. ROBINSON ELECTRIC PLANT, UNIT NO. 2 (TAC NO. MA9672)

Dear Mr. Young:

By letter dated August 4, 2000, Carolina Power & Light Company (CP&L), the licensee for H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP2), submitted a request for relief from the requirements of the ASME Code, Section XI, 1986 Edition for the third 10-year inservice inspection interval of HBRSEP2 regarding deferral of the required visual examination of the internal surfaces of large valves until such time that the valve is disassembled for maintenance or repair. The valves in question are the two residual heat removal system inlet valves for which disassembly to perform the Code visual examination would first require off-loading of the reactor core.

The staff finds that the licensee's request for the alternative for visual examinations is acceptable, that disassembly of the valve for the sole purpose of a VT-3 visual examination would result in a hardship without a compensating increase in the level of quality and safety, and with the relief as authorized there is reasonable assurance of structural integrity. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee's proposed alternative is authorized for the third 10-year inservice inspection interval of HBRSEP2.

Further details regarding the staff's evaluation and conclusions are contained in the enclosed Safety Evaluation.

Sincerely,

/RA by Robert Martin Acting for/
Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM
REQUEST FOR RELIEF NO. 28 FROM ASME CODE, SECTION XI REQUIREMENTS
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NUMBER 50-261

1.0 INTRODUCTION

The inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (Code) and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable ASME Code, Section XI, for the third 10-year ISI interval of H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP2), is the 1986 Edition with no addenda.

By letter dated August 4, 2000, Carolina Power & Light Company (CP&L, the licensee for HBRSEP2) submitted a request for relief from the requirements of the ASME Code, Section XI, 1986 Edition, for the third 10-year ISI interval of HBRSEP2 regarding deferral of the required visual examination of the internal surfaces of large valves until such time that the valve is disassembled for maintenance or repair. The valves in question are the two residual heat removal (RHR) system inlet valves for which disassembly to perform the Code visual examination would first require off-loading of the reactor core. CP&L has stated that the disassembly and the re-assembly of these valves would involve significant occupational radiation dose to plant personnel, and the maintenance associated with such effort would cause unusual difficulty and hardship.

The staff has evaluated the licensee's request for relief pursuant to 10 CFR 50.55a(a)(3)(ii) for the third 10-year ISI interval of HBRSEP2.

2.0 DISCUSSION

Identification of Components

RHR System Inlet Valves (RHR-750 and RHR-751)

Code Requirements

ASME Code, Section XI, 1986 Edition, Table IWB-2500-1, Examination Category B-M-2, Item B12.50, requires a VT-3 visual examination of the internal surface of one valve in each group of valves for the category of 4-inch valves or larger during the interval.

Examination Category B-M-2, Item B12.50, examinations are limited to at least one valve within each group of valves that are of the same size, construction design (such as a globe, gate or check), and manufacturing method, and that perform similar functions in the system (such as containment isolation and system overpressure protection).

Relief Requested

Relief is requested from the VT-3 visual examination of internal surfaces of valve bodies, specified in ASME Section XI Code, 1986 Edition with no Addenda, Table IWB-2500-1, Category B-M-2, Item B12.50, until such time that the valve is disassembled for maintenance or repair.

Licensee's Proposed Alternative

No alternative examination is proposed in the event that no valves in this category are disassembled for maintenance and repair.

Basis for Relief

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for HBRSEP2 on the basis that compliance with the specified requirements of the Code would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

3.0 EVALUATION

The licensee's request for relief pertains to the VT-3 visual examination of the internal surfaces of one of the two RHR inlet valves required by the Code during the third inspection interval. The licensee states that the disassembly of the valve for VT-3 examination would require off-load of the reactor core to the spent fuel pool since the RHR system cannot be operating during the disassembly of the valve. The disassembly and re-assembly effort would also expose plant personnel to high levels of radiation. Furthermore, following the re-assembly effort, if leakage is detected from the valve during a system pressure test of the RHR system prior to restart, the entire operation, including off-load of the reactor core to the spent fuel pool

and the disassembly of the valve, would have to be repeated in order to correct the deficiency. The staff believes that performance of a VT-3 visual examination of the internal surfaces will result in a small increase in plant safety margins while causing a disproportionate impact on expenditures of plant manpower and radiation exposure. Therefore, the disassembly of the RHR inlet valve for the sole purpose of a VT-3 visual examination would result in a hardship without a compensating increase in the level of quality and safety. The staff, therefore, has determined that it is prudent to defer the Code-required VT-3 visual examination of the internal surfaces until such time that the valve is disassembled for maintenance or repair. Moreover, all the Code editions subsequent to the 1986 Edition, including the 1995 Edition with the 1996 Addenda to the ASME Code, Section XI, which has been endorsed by the NRC, have incorporated the same alternative as that proposed by the licensee and provide reasonable assurance for structural integrity. Therefore, the licensee's request to perform the VT-3 visual examination on the internal surfaces of the valves only when the surfaces are made accessible due to disassembly for maintenance or repair is an acceptable alternative.

4.0 CONCLUSION

The staff concludes that the disassembly of an RHR inlet valve located in the inlet connection to the reactor coolant system for the sole purpose of conducting a Code-required VT-3 examination is considered to be a hardship without a compensating increase in the level of quality and safety. Therefore, the Code-required VT-3 visual examination of the internal surfaces of an RHR inlet valve may be deferred until a valve is disassembled for maintenance or repair. Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee's proposed alternative is authorized for the third 10-year ISI interval of HBRSEP2.

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Date: November 17, 2000

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