



**Carolina Power & Light Company**  
Robinson Nuclear Plant  
3581 West Entrance Road  
Hartsville SC 29550

Serial: RNP-RA/01-0018

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United States Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR RELIEF FROM APPENDIX VIII,  
SUPPLEMENTS 4 AND 6, REGARDING  
EXAMINATION CATEGORY B-A, ITEM NO. B1.22, REACTOR  
PRESSURE VESSEL HEAD MERIDIONAL WELDS (RELIEF REQUEST NO. 31)

Ladies and Gentlemen:

In accordance with 10 CFR 50.55a(g)(6)(i), H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, requests relief from the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, Supplements 4 and 6, as applied to Article IWB-2000, Table IWB-2500-1, Examination Category B-A, Item No. B1.22, regarding volumetric examinations of the accessible length of Reactor Pressure Vessel (RPV) head meridional welds.

In this regard, please find attached the supporting details and technical information associated with HBRSEP, Unit No. 2, Relief Request No. 31.

The need for this relief was discussed in a teleconference with the NRC staff on January 16, 2001.

HBRSEP, Unit No. 2, is currently in the Third Ten-Year Inservice Inspection (ISI) Interval, which began on February 19, 1992. The ISI Program Plan for this interval implements the 1986 Edition of Section XI of the ASME B&PV Code, with the exception of piping weld examinations for Class 1, Examination Category B-J, which are determined by the requirements of the 1974 Edition, through Summer 1975 Addenda, as allowed by 10 CFR 50.55a.

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United States Nuclear Regulatory Commission

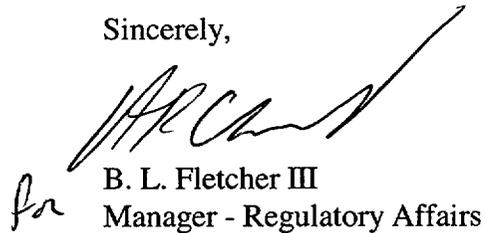
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The requested relief, if approved, will be implemented during the HBRSEP, Unit No. 2, Third Ten-Year ISI Interval and will be needed for upcoming Refueling Outage (RO) - 20, which is scheduled to begin in April 2001. Approval of this relief on or before March 30, 2001, would allow adequate time for the necessary ISI program revisions in support of examinations scheduled to be performed during RO-20.

If you have any questions regarding this matter, please contact Mr. H. K. Chernoff.

Sincerely,

  
B. L. Fletcher III  
Manager - Regulatory Affairs

CTB/ctb

Attachment:

Relief Request No. 31

c: Mr. L. A. Reyes, NRC, Region II  
Mr. R. Subbaratnam, NRC, NRR  
NRC Resident Inspector

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2**

**REQUEST FOR RELIEF FROM APPENDIX VIII,  
SUPPLEMENTS 4 AND 6, REGARDING  
EXAMINATION CATEGORY B-A, ITEM NO. B1.22, REACTOR  
PRESSURE VESSEL HEAD MERIDIONAL WELDS (RELIEF REQUEST NO. 31)**

**Item for Which Relief is Requested**

This relief request is applicable to the Reactor Pressure Vessel (RPV) head meridional weld that is scheduled for examination during the upcoming Refueling Outage (RO) - 20 at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The unique identification number associated with this RPV head meridional weld is CPL-101/08.

**Code Examination Requirements**

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, Article IWB-2000, Table IWB-2500-1, Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel," Item No. B1.22, "Meridional," requires a volumetric examination of the accessible length of RPV head meridional welds.

10 CFR 50.55a, as amended on September 22, 1999, requires implementation of the ASME Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems." Specifically, 10 CFR 50.55a(b)(6)(C) requires implementation of Section XI, Appendix VIII, Supplements 4 and 6, on November 22, 2000. These supplements prescribe qualification requirements for procedures, personnel, and equipment used to detect and size flaws during RPV examinations.

**Requested Relief**

Relief is requested from the requirements of the ASME Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, Supplements 4 and 6, as applied to Article IWB-2000, Table IWB-2500-1, Examination Category B-A, Item No. B1.22, regarding volumetric examinations of the accessible length of RPV head meridional welds. The Third Ten-Year Inservice Inspection (ISI) examination requirement under the referenced Examination Category and Item Number is for volumetric examination of the accessible length of one weld. Therefore, the requested relief is applicable to the HBRSEP, Unit No. 2, RPV head meridional weld CPL-101/08.

This relief is requested for and will be implemented in the Third Ten-Year ISI Interval, which began on February 19, 1992.

### **Basis for Requested Relief**

This relief is requested pursuant to 10 CFR 50.55a(g)(6)(i) on the basis that compliance with the referenced code requirements is impractical and that public health and safety will not be endangered by allowing the proposed alternatives in lieu of code requirements.

10 CFR 50.55a, as amended on September 22, 1999, requires implementation of the ASME Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems." Specifically, 10 CFR 50.55a(b)(6)(C) requires implementation of Section XI, Appendix VIII, Supplements 4 and 6, on November 22, 2000. These supplements prescribe qualification requirements for procedures, personnel, and equipment used to detect and size flaws during RPV examinations.

The Performance Demonstration Initiative (PDI) was formed by U.S. nuclear utilities in 1991 to address the requirements of Appendix VIII in "an efficient, cost-effective, and technically sound manner." Technical and programmatic leadership for this initiative is being provided by the Electric Power Research Institute (EPRI) Non-Destructive Examination (NDE) Center. Qualification demonstrations for the PDI were initiated in 1994. The approved, generic PDI procedure developed by EPRI for meeting the requirements of Appendix VIII, Supplements 4 and 6, is currently qualified to a thickness through 7.64 inches when performing manual examinations of RPV head welds. The HBRSEP, Unit No. 2, RPV head thickness is 7.75 inches, which exceeds the scope of the currently approved procedure.

During the summer of 2000, HBRSEP, Unit No. 2, had discussions with EPRI concerning generic PDI procedure limitations on the maximum thickness for manual examination of RPV head welds. During the summer and fall of 2000, EPRI attempted to qualify the generic PDI procedure to a thickness greater than 7.64 inches, but was unsuccessful. In early January 2001, HBRSEP, Unit No. 2, was informed by EPRI that another attempt would be made to qualify the generic PDI procedure to a thickness beyond 7.64 inches. Information received from EPRI during the week ending February 2, 2001, indicates that the generic PDI procedure cannot be qualified to encompass the thickness of the HBRSEP, Unit No. 2, RPV head welds. Additionally, EPRI has no near-term activity to extend the RPV weld qualification and examination techniques beyond 7.64 inches.

Based upon the above, qualified PDI procedures are not available for the RPV head weld examination that is required to be performed during the HBRSEP, Unit No. 2, RO-20, which is scheduled to begin in April 2001. Therefore, relief is requested pursuant to 10 CFR 50.55a(g)(6)(i) on the basis that compliance with the requirements of Section XI, Appendix VIII, Supplements 4 and 6, is impractical.

### **Proposed Alternative Examinations**

Volumetric examination of the accessible length of RPV head meridional weld CPL-101/08 will be performed as prescribed within the ASME Code, Section XI, 1986 Edition with no Addenda, Table IWB-2500-1, Examination Category B-A, Item No. B1.22. This examination will be performed in accordance with Regulatory Guide 1.150, Revision 1, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations."

Previous examinations of RPV head meridional weld CPL-101/08 have been performed during the Second Ten-Year ISI Interval in accordance with Table IWB-2500-1, Examination Category B-A, Item No. B1.22, and Regulatory Guide 1.150. These examinations were performed during outages in 1984, 1986, and 1990, and included both ultrasonic and magnetic particle testing. No indications were observed during these examinations.

### **Implementation Schedule**

This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Third Ten-Year ISI Interval, which began on February 19, 1992.

It is requested that this relief be approved on a schedule that will allow implementation during the upcoming RO-20, which is currently scheduled to begin in April 2001. Approval of this relief on or before March 30, 2001, would allow adequate time for the necessary ISI program revisions in support of examinations scheduled to be performed during RO-20.