10 CFR 50.55a

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United States Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, Maryland 20852

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

REQUEST FOR RELIEF FROM ASME
BOILER AND PRESSURE VESSEL CODE,
SECTION XI, APPENDIX VIII (SUPPLEMENTS 2 AND 10),
FOR THE FOURTH TEN-YEAR INSERVICE INSPECTION PROGRAM INTERVAL

Ladies and Gentlemen:

The purpose of this letter is for Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), to request relief, in accordance with 10 CFR 50.55a(a)(3)(i), from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 1995 Edition, 1996 Addenda, for reactor pressure vessel examinations at the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. Relief is requested on the basis that alternative methods provide an acceptable level of quality and safety.

Specifically, relief is requested to use the qualification requirements for weld examinations conducted from the inside piping surface contained in ASME Code Case N-695 and Code Case N-696, along with the vendor's Root Mean Square error achieved under the Performance Demonstration Initiative at the Electric Power Research Institute Nondestructive Examination Center. The details of the relief request are provided as an attachment to this letter.

PEC requests approval of this request by October 10, 2008, in order to support the Fourth Ten-Year Inservice Inspection for HBRSEP, Unit No. 2.

If you have any questions concerning this matter, please contact Mr. C. A. Castell at (843) 857-1626.

Sincerely,
Original signed by
Chuck Baucom
Charles T. Baucom
Manager – Support Services – Nuclear

CTB/ahv

A047
NRR
Rec'd 7/23/08
DCD

Attachment

c: Mr. L. A. Reyes, NRC, Region II
Ms. M. G. Vaaler, NRC, NRR
NRC Resident Inspector

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

REQUEST FOR RELIEF FROM ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI, APPENDIX VIII (SUPPLEMENTS 2 AND 10)

Code Requirements for Which Relief is Requested

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," provides requirements for performance demonstration for ultrasonic examination procedures, equipment, and personnel used to detect and size flaws.

Examination of Class 1 piping welds are required to be performed using procedures, personnel, and equipment qualified to the criteria of the ASME B&PV Code, 1995 Edition, 1996 Addenda, Section XI, Appendix VIII, Supplement 2, "Qualification Requirements for Wrought Austenitic Piping Welds," for the examination of Category B-J, B9.11, "Circumferential Welds," and Supplement 10, "Qualification Requirements for Dissimilar Metal Piping Welds," for the examination of Category B-F, B5.10, "Nozzle-to-Safe End Butt Welds."

Supplement 2, paragraph 3.2, "Sizing Acceptance Criteria," subparagraph (b), states, "The RMS [Root Mean Square] error of the flaw depths estimated by ultrasonics, as compared with the true depths, shall not exceed 0.125 in."

Supplement 10, paragraph 3.2, "Sizing Acceptance Criteria," subparagraph (b), states, "Examination procedures, equipment, and personnel are qualified for depth sizing when the RMS error of the flaw depth measurements, as compared to the true flaw depths, is less than or equal to 0.125 in."

Code Case N-695, "Qualification Requirements for Dissimilar Metal Piping Welds, Section XI, Division 1," provides alternative requirements to Appendix VIII, Supplement 10, and is unconditionally approved for use through Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 15.

Paragraph 3.3(c) of Code Case N-695 states, "Examination procedures, equipment, and personnel are qualified for depth-sizing when the RMS error of the flaw depth measurements, as compared to the true flaw depths, do not exceed 0.125 in. (3 mm)."

Code Case N-696, "Qualification Requirements for Appendix VIII Piping Examinations Conducted From the Inside Surface Section XI, Division 1," provides alternative requirements to Appendix VIII, Supplement 2, and is unconditionally approved for use through Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 15.

Paragraph 3.3(d) of Code Case N-696 states, "Supplement 2 or Supplement 3 examination procedures, equipment, and personnel are qualified for depth-sizing when the flaw depths estimated by ultrasonics, as compared with the true depths, do not exceed 0.125 in. (3 mm) RMS, when they are combined with a successful Supplement 10 qualification."

Specific Relief Requested

In place of the existing requirements, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, will implement the Nuclear Regulatory Commission approved alternative requirements of Code Case N-695 and Code Case N-696 for qualifications associated with the volumetric examinations of reactor pressure vessel nozzle-to-safe end welds (B-F, B5.10, Table 1) to satisfy MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines," and volumetric examinations of reactor coolant piping welds (B-J, B9.11, Table 2) associated with the nozzle to safe-end welds.

For examinations of the welds listed in Tables 1 and 2 of this relief request, HBRSEP, Unit No. 2, proposes to apply the difference between the examination vendor's (IHI Southwest) achieved RMS combined error of 0.211 inch and the required 0.125 inch RMS error of Code Case N-695 and Code Case N-696 to actual flaw depths when depth-sizing of indications is required.

Basis for Requesting Relief

In accordance with 10 CFR 50.55a(a)(3)(i), relief is requested for HBRSEP, Unit No. 2, on the basis that the proposed alternative will provide an acceptable level of quality and safety.

The Electric Power Research Institute Nondestructive Examination Center Performance Demonstration Initiative (PDI) stated that currently no vendor has successfully demonstrated the ASME B&PV Code-required 0.125 inch RMS value for qualification tests for examinations conducted from the inside diameter surface for Supplements 2 or 10.

The PDI has verified that the selected examination vendor has achieved a 0.211 inch RMS error for Supplement 2 qualification, 0.212 inch RMS error for Supplement 10 qualification, and a 0.211 inch RMS error for Supplements 2 and 10 combined.

For examinations of the welds listed in Tables 1 and 2 of this relief request, HBRSEP, Unit No. 2, proposes to apply the difference between the examination vendor's (IHI Southwest) achieved RMS combined error of 0.211 inch and the required 0.125 inch RMS error of Code Case N-695 and Code Case N-696 to actual flaw depths when depth-sizing of indications is required. Applying the difference between the required RMS error and achieved RMS error to the actual flaw being sized will ensure a conservative bounding flaw depth for both similar and dissimilar metal welds.

Implementation Schedule

This relief request will be implemented during the remainder of the Fourth Ten-Year Inservice Inspection Interval, which is scheduled to end on February 18, 2012.

TABLE 1
Dissimilar Metal Welds

Weld Identification	Weld Description	Inservice Inspection Drawing	ASME Code Category	ASME Code Item Number
107/1DM	RPV Nozzle-To-Safe End	HBR2-10618 Sheet 10	B-F	B5.10
107/14DM	Safe-End to RPV Nozzle	HBR2-10618 Sheet 10	B-F	B5.10
107A/1DM	RPV Nozzle-To-Safe End	HBR2-10618 Sheet 11	B-F	B5.10
107A/14DM	Safe-End to RPV Nozzle	HBR2-10618 Sheet 11	B-F	B5.10
107B/1DM	RPV Nozzle-To-Safe End	HBR2-10618 Sheet 12	B-F	B5.10
107B/14DM	Safe-End to RPV Nozzle	HBR2-10618 Sheet 12	B-F	B5.10

TABLE 2
Stainless Steel Welds

Weld Identification	Weld Description	Inservice Inspection Drawing	ASME Code Category	ASME Code Item Number
107/1	Safe-End to Pipe	HBR2-10618 Sheet 10	B-J	B9.11
107/14	Elbow to Safe-End	HBR2-10618 Sheet 10	B-J	B9.11
107A/1	Safe-End to Pipe	HBR2-10618 Sheet 11	B-J	B9.11
107A/14	Elbow to Safe-End	HBR2-10618 Sheet 11	B-J	B9.11
107B/1	Safe-End to Pipe	HBR2-10618 Sheet 12	B-J	B9.11
107B/14	Elbow to Safe-End	HBR2-10618 Sheet 12	B-J	B9.11