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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

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
FOR THE FOURTH TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM

Ladies and Gentlemen:

The Fourth Ten-Year Interval Inservice Inspection (ISI) program and associated plan for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, was submitted to the NRC by letter dated August 17, 2001. An electronic mail message received on January 10, 2002, requested additional information pertaining to relief requests for the Fourth Ten-Year ISI interval. The request for additional information was discussed in a conference call on January 22, 2002, between HBRSEP, Unit No. 2, and NRC staff personnel involved in the review of these relief requests.

The request for additional information provided on January 10, 2002, as modified during the conference call on January 22, 2002, is contained in Attachment I. The responses to these questions are also provided in Attachment I. It was determined that some of the relief requests should be revised based on review of the request for additional information. Attachment I also states that Relief Request Nos. 13 and 14 are being withdrawn. Attachment II provides the proposed revised relief requests.

The Fourth Ten-Year ISI Interval for HBRSEP, Unit No. 2, started on February 19, 2002. Therefore, approval of relief requests associated with the Fourth Ten-Year ISI Interval program plan update is requested as soon as practicable to allow efficient implementation of ISI program plan requirements.

A047

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville, SC 29550

If you have any questions regarding this matter, please contact Mr. C. T. Baucom.

Sincerely,

B. L. Fletcher III
Manager - Regulatory Affairs

CAC/cac

Attachments:

I. Responses to Requests for Additional Information
II. Revised Relief Requests
III. Drawings

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

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

RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION

Request for Relief No. RR-01

(Previously approved during the Third Interval under TAC No. M81310, dated October 19, 1992).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(g)(5), the licensee requested relief from performing Code-required 100% volumetric examination of the pressurizer surge line nozzle inside radius section.

The pressurizer surge line nozzle is examined by VT-2 visual examination during pressure testing each refueling outage. In order for the proposed alternative to be evaluated, please provide the following:

Please provide sketches or photos with sufficient details so that the staff could determine the impracticality in performing the Code-required surface examinations of the subject welds.

RESPONSE:

Relief was requested for the pressurizer surge line nozzle inner radius volumetric examination, Examination Category B-D, Item Number B3.120. The drawing (labeled "Pressurizer Bottom") provided in Attachment III shows that this weld is surrounded by pressurizer heater electrical connections.

Request for Relief No. RR-02

(Previously approved during the Third Interval under TAC No. M81310, dated October 19, 1992).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from the Code-required surface, volumetric, and VT-3 visual examination of regenerative heat exchanger vessel head weld, tube sheet-to-shell weld, vessel welds, inlet, outlet, intermediate connecting piping welds, inside radius section, and component supports.

The licensee did not propose any alternatives to the Code-required examinations. VT-2 visual examination during the pressure testing of the heat exchanger pressure-retaining boundary will be performed each refueling outage. In order for the proposed alternative to be evaluated, please provide the following:

Since the justification for the relief is based on hardship in meeting the ALARA requirements in the regenerative heat exchanger room, please clarify if all welds identified in this relief request are located in this room, specifically the B-J welds and component supports which are referenced for general applications. Also, provide the actual exposure levels estimated for performing the Code-required examinations for each weld included in this relief request.

VT-2 examination during the pressure testing of the regenerative heat exchanger in each refueling outage can be accomplished without exceeding the ALARA limits. Please explain why all Code-required examinations during the refueling outage exceed the ALARA limits.

The staff has approved similar reliefs; however, the VT-3 visual examinations were performed and were part of the basis for authorizing the alternative. Suggest the licensee review Virginia Electric and Power Company's letter dated December 14, 2000, for North Anna, Unit 2, TAC No. MB0750 for information required.

RESPONSE:

The drawing of the regenerative heat exchanger provided in Attachment III specifically identifies the applicable welds in conjunction with Table 1. Table 1 also includes estimated dose rates and projected doses for weld examinations. The welds and supports identified in Table 1 are located inside the regenerative heat exchanger room.

The time required for VT-2 examination is significantly less than the time required for a surface or volumetric examination. ASME Section XI, 1995 Edition - 1996 Addenda, IWA-5242(a) states, "Essentially vertical surfaces of insulation need only be examined at the lowest elevation where leakage may be detectable. Essentially horizontal surfaces of insulation shall be examined at each insulation joint." IWA-5242(b) states, "When examining insulated components, the examination of the surrounding area (including floor areas or equipment surfaces located underneath the component) for evidence of leakage, or other areas to which such leakage may be channeled, shall be required." A VT-2 examination can be performed from a distance in a short period of time, thereby lowering radiation exposure to the examiner.

Surface and volumetric examinations may require scaffolding in addition to insulation removal and weld preparation. The asbestos insulation on the regenerative heat exchanger is original insulation and would have to be replaced in its entirety based on the brittleness of the insulation. Surface examination requires a hands-on application in the performance of these examinations.

The total estimated dose associated with examination of the regenerative heat exchanger is approximately 70 Rem. This is based on approximately 30 Rem estimated for preparation and examination, and 40 Rem for insulation and scaffolding.

There are geometric restrictions associated with these components which also cause difficulty in the performance of Code-required examinations. The nozzle-to-vessel welds and nozzle inside radius sections for the heat exchanger were not designed for ultrasonic examination from the

outside diameter. The small diameter of the heat exchanger shell prevents a meaningful ultrasonic examination of these components. The Code-required volumetric examination on the heat exchanger head circumferential welds is limited due to the weld crown, radius of the closure caps, and the nozzles. The Code-required volumetric examination of the tubesheet welds is limited by the weld crown and is obstructed by a support clamp. The clamp must be removed prior to the examination of these welds.

Based on review of the North Anna Relief Request discussed in the request for additional information, HBRSEP, Unit No. 2, further proposes to perform a VT-3 general visual examination of the regenerative heat exchanger, without insulation removal, once each inspection period, as an alternative to the required surface/volumetric examination. Relief Request No. RR-02 has been revised to include the proposed alternative examination and is provided in Attachment II.

Table 1: Regenerative Heat Exchanger Weld Examination Dose Estimates

Weld ID	Code Class	Configuration/ Description	Cate-gory	Item Number	Exam Required	Scaffold	Insulation Removal	Weld Prep	NDE	Dose Rate (Est.)	Total Exam Dose
						(Estimated in tenths of an hour)					
106/01	1	TUBESHEET TO HEAD	B-B	B2.51	Volumetric	**	*	0.10	0.30	3 R/HR	1.20 R
106/02	1	TUBESHEET TO SHELL	B-B	B2.80	Volumetric	**	*	0.10	0.30	3 R/HR	1.20 R
106/05	1	TUBESHEET TO HEAD	B-B	B2.51	Volumetric	N/A	*	0.10	0.30	3 R/HR	1.20 R
106/06	1	TUBESHEET TO SHELL	B-B	B2.80	Volumetric	N/A	*	0.10	0.30	3 R/HR	1.20 R
106/09	1	TUBESHEET TO HEAD	B-B	B2.51	Volumetric	N/A	*	0.10	0.30	3 R/HR	1.20 R
106/10	1	TUBESHEET TO SHELL	B-B	B2.80	Volumetric	N/A	*	0.10	0.30	3 R/HR	1.20 R
106/13	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	**	*	0.10	0.25	3 R/HR	1.05 R
106/13IR	1	INNER RADIUS	B-D	B3.160	Volumetric	**	*	0.10	0.25	3 R/HR	1.05 R
106/14	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	**	*	0.10	0.25	3 R/HR	1.05 R
106/14IR	1	INNER RADIUS	B-D	B3.160	Volumetric	**	*	0.10	0.25	3 R/HR	1.05 R
106/15	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/15IR	1	INNER RADIUS	B-D	B3.160	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/16	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/16IR	1	INNER RADIUS	B-D	B3.160	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/17	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/17IR	1	INNER RADIUS	B-D	B3.160	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/18	1	REGEN HX TO NOZZLE	B-D	B3.150	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
106/18IR	1	INNER RADIUS	B-D	B3.160	Volumetric	N/A	*	0.10	0.25	3 R/HR	1.05 R
123/62	1	PIPE TO ELBOW	B-J	B9.21	Surface	**	*	0.10	0.25	3 R/HR	1.05 R
123/61	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	**	*	0.10	0.25	3 R/HR	1.05 R
123/58	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	**	*	0.10	0.25	3 R/HR	1.05 R
123/57	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	N/A	*	0.10	0.25	3 R/HR	1.05 R
123/54	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	N/A	*	0.10	0.25	3 R/HR	1.05 R
123/53	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	N/A	*	0.10	0.25	3 R/HR	1.05 R
123A/50	1	BRANCH CONNECTION TO PIPE	B-J	B9.21	Surface	N/A	*	0.10	0.25	3 R/HR	1.05 R
123A/48	1	PIPE TO ELBOW	B-J	B9.21	Surface	N/A	*	0.10	0.25	3 R/HR	1.05 R
206/A	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R
206/B	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R
206/C	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R
206/D	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R
206/E	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R
206/F	2	REGEN HX SUPPORT	F-A	F1.40	Visual	N/A	N/A	N/A	0.10	3 R/HR	0.30 R

* Asbestos abatement required. Work Order is planned as follows; 12 hours to tent, 12 hours to remove asbestos insulation, 12 hours to re-insulate with an estimated total dose of 36 Rem.

** Scaffold construction and removal is estimated at total of 6 hours with an estimated total dose of 4 Rem.

Request for Relief No. RR-03

(Previously approved during the Third Interval under TAC No. M81310, dated October 19, 1992).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(g)(5), the licensee requested relief from using actual component materials for calibration blocks to be used in ultrasonic testing.

The licensee proposes to use calibration blocks fabricated of similar materials, i.e., SA-533, Grade B, in lieu of SA-302, Grade B, and SA-508 in lieu of SA-336. Also, the licensee proposed to use manually clad reactor vessel calibration blocks that would facilitate comparison of data obtained during the Fourth Ten-Year ISI Interval with examination data obtained during the previous interval. In order for the proposed alternative to be evaluated, please provide the following:

Based on chemical and physical properties, SA-533, Grade B, is considered to be essentially equivalent to SA-302, Grade B. This parity is also evident in the properties of the SA-336 and SA-508 materials. These materials are considered to be acoustically equivalent, thereby meeting the intent of the Code. Please provide additional details, which support this conclusion. Also, why are the Code-required calibration blocks not available? If this is permanent situation, relief should be pursued with the Code Committee.

The use of manually clad reactor vessel calibration blocks would facilitate comparison of data obtained during the Fourth Ten-Year ISI Interval with examination data obtained during the previous intervals. Please provide additional details supporting the impracticality of using the Code-required calibration blocks.

RESPONSE:

The subject calibration blocks have been used for previous ISI intervals. The continued use of these calibration blocks will provide consistent results. The procurement of calibration blocks of the exact materials is not feasible because the material was not retained for this purpose when the reactor vessel was fabricated. An increase in plant safety would not result from requiring the fabrication of new calibration blocks to current Code requirements because the physical properties of the subject materials are equivalent.

Request for Relief No. RR-04

(Previously approved during the Third Interval under TAC No. M81310, dated October 19, 1992).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(g)(5), the licensee requested relief from the Code-required volumetric examination of the reactor pressure vessel closure head peel segment-to-disk circumferential weld. In order for the proposed relief to be evaluated, please provide the following:

Accessibility for examination of this weld was not provided in the original plant design, which occurred prior to issuance of the Section XI ISI examination requirements. The closure head peel segment-to-disk weld is completely enclosed within the pattern of Control Rod Drive Mechanism (CRDM) penetrations inside the reactor vessel shroud, such that no portion of the weld is accessible for either surface or volumetric examination. Please provide sketches or photos showing the inaccessibility of the subject weld.

RESPONSE:

Relief was requested for the closure head peel segment-to-disk weld (weld # 1) that is completely enclosed within the pattern of Control Rod Drive Mechanism (CRDM) penetrations inside the reactor vessel shroud. The drawing (HBR2-10618/Sheet 1) provided in Attachment III shows additional details regarding the impracticality of this volumetric examination.

Request for Relief No. RR-05

(Previously approved during the Third Interval under TAC No. M81310, dated October 19, 1992).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(g)(5), the licensee requested relief from performing the Code-required volumetric and surface examination of essentially 100% of the reactor coolant system piping cold leg circumferential butt welds. In order for the proposed alternative to be evaluated, please provide the following:

Are there any surrogate welds that could be surface and/or volumetrically examined to assure structural integrity?

RESPONSE:

The subject welds (one weld on each reactor coolant loop cold leg) for which relief is requested are contained within the concrete biological shield wall surrounding the reactor vessel and are therefore inaccessible for examination. The three welds remain in the Examination Category B-J, B9.11, total population count to which the 25% selection (in accordance with 1974 Summer 1975 Code) is applied, but these three welds would not be selected for examination due to the inaccessibility of the subject welds.

Table 2 provides a list of Reactor Coolant System main piping welds. This table also shows that there are fourteen Examination Category B-J Reactor Coolant System main piping welds that are currently scheduled for inspection during the Fourth Ten-Year Interval.

Table 2: Reactor Coolant System Main Piping Welds

Weld ID	Description	Category	Item Number	Period Scheduled
107/01DM	HOT LEG "A" NOZZLE TO SAFE END	B-F	B5.10	3
107/01	HOT LEG "A" SAFE END TO PIPE	B-J	B9.11	
107/02	HOT LEG "A" PIPE TO PIPE	B-J	B9.11	
107/03	HOT LEG "A" PIPE TO ELBOW	B-J	B9.11	
107/04	HOT LEG "A" ELBOW TO SAFE END	B-J	B9.11	1
107/04DM	HOT LEG "A" SAFE END TO HOT LEG NOZZLE	B-F	B5.70	1
107/05DM	CROSSOVER LEG "A" S/G NOZZLE TO SAFE END	B-F	B5.70	1
107/05	CROSSOVER LEG "A" SAFE END TO ELBOW	B-J	B9.11	1
107/06	CROSSOVER LEG "A" ELBOW TO PIPE	B-J	B9.11	1
107/07	CROSSOVER LEG "A" PIPE TO ELBOW	B-J	B9.11	
107/08	CROSSOVER LEG "A" ELBOW TO PIPE	B-J	B9.11	
107/09	CROSSOVER LEG "A" PIPE TO ELBOW	B-J	B9.11	1
107/10	CROSSOVER LEG "A" ELBOW TO PUMP	B-J	B9.11	
107/11	COLD LEG "A" PUMP TO PIPE	B-J	B9.11	
107/12	COLD LEG "A" PIPE TO PIPE	B-J	B9.11	1
107/13	COLD LEG "A" PIPE TO ELBOW	B-J	B9.11	RR-05
107/14	COLD LEG "A" ELBOW TO SAFE END	B-J	B9.11	
107/14DM	COLD LEG "A" SAFE END TO COLD LEG NOZZLE	B-F	B5.70	3
107A/01DM	HOT LEG "B" NOZZLE TO SAFE END	B-F	B5.10	3
107A/01	HOT LEG "B" SAFE END TO PIPE	B-J	B9.11	
107A/02	HOT LEG "B" PIPE TO PIPE	B-J	B9.11	
107A/03	HOT LEG "B" PIPE TO ELBOW	B-J	B9.11	
107A/04	HOT LEG "B" ELBOW TO SAFE END	B-J	B9.11	2
107A/04DM	HOT LEG "B" SAFE END TO HOT LEG NOZZLE	B-F	B5.70	2
107A/05DM	CROSSOVER LEG "B" S/G NOZZLE TO SAFE END	B-F	B5.70	2
107A/05	CROSSOVER LEG "B" SAFE END TO ELBOW	B-J	B9.11	2
107A/06	CROSSOVER LEG "B" ELBOW TO PIPE	B-J	B9.11	2
107A/07	CROSSOVER LEG "B" PIPE TO ELBOW	B-J	B9.11	2
107A/08	CROSSOVER LEG "B" ELBOW TO PIPE	B-J	B9.11	
107A/09	CROSSOVER LEG "B" PIPE TO ELBOW	B-J	B9.11	

Table 2: Reactor Coolant System Main Piping Welds (continued)

Weld ID	Description	Category	Item Number	Period Scheduled
107A/10	CROSSOVER LEG "B" ELBOW TO PUMP	B-J	B9.11	
107A/11	COLD LEG "B" PUMP TO PIPE	B-J	B9.11	
107A/12	COLD LEG "B" PIPE TO PIPE	B-J	B9.11	2
107A/13	COLD LEG "B" PIPE TO ELBOW	B-J	B9.11	RR-05
107A/14	COLD LEG "B" ELBOW TO SAFE END	B-J	B9.11	
107A/14DM	COLD LEG "B" SAFE END TO COLD LEG NOZZLE	B-F	B5.70	3
107B/01DM	HOT LEG "C" NOZZLE TO SAFE END	B-F	B5.10	3
107B/01	HOT LEG "C" SAFE END TO PIPE	B-J	B9.11	
107B/02	HOT LEG "C" PIPE TO PIPE	B-J	B9.11	
107B/03	HOT LEG "C" PIPE TO ELBOW	B-J	B9.11	
107B/04	HOT LEG "C" ELBOW TO SAFE END	B-J	B9.11	3
107B/04DM	HOT LEG "C" SAFE END TO HOT LEG NOZZLE	B-F	B5.70	3
107B/05DM	CROSSOVER LEG "C" S/G NOZZLE TO SAFE END	B-F	B5.70	3
107B/05	CROSSOVER LEG "C" SAFE END TO ELBOW	B-J	B9.11	3
107B/06	CROSSOVER LEG "C" ELBOW TO PIPE	B-J	B9.11	3
107B/07	CROSSOVER LEG "C" PIPE TO ELBOW	B-J	B9.11	
107B/08	CROSSOVER LEG "C" ELBOW TO PIPE	B-J	B9.11	
107B/09	CROSSOVER LEG "C" PIPE TO ELBOW	B-J	B9.11	
107B/10	CROSSOVER LEG "C" ELBOW TO PUMP	B-J	B9.11	
107B/11	COLD LEG "C" PUMP TO PIPE	B-J	B9.11	3
107B/12	COLD LEG "C" PIPE TO PIPE	B-J	B9.11	
107B/13	COLD LEG "C" PIPE TO ELBOW	B-J	B9.11	RR-05
107B/14	COLD LEG "C" ELBOW TO SAFE END	B-J	B9.11	
107B/14DM	COLD LEG "C" SAFE END TO COLD LEG NOZZLE	B-F	B5.70	3

Request for Relief No. RR-07

(Previously approved during the Third Interval under TAC No. MB1541, dated June 6, 2001).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from performing Code-required volumetric and surface examinations of six RPV nozzle-to-safe end welds.

The licensee proposes to perform volumetric examinations during vessel examinations and a VT-2 examination in accordance with IWA-5242 requirements. In order for the proposed alternative to be evaluated please provide the following:

Previous examination history supports the Proposed Alternative Examinations in lieu of the Code-required volumetric and surface examinations. No rejectable indications have been identified by examinations conducted during the Third Ten-Year ISI Interval. The dissimilar metal welds, as well as the safe end-to-pipe welds, were examined at the conclusion of the Third Ten-Year Interval for the ASME Code-required volume. Two indications were identified in the hot leg "B" safe end on the nozzle side, and one indication was identified in the cold leg "C" nozzle side. These three indications were evaluated in accordance with Code requirements and found to be acceptable. (a) Please provide additional details regarding this conclusion. (b) Please explain why the Code-required volumetric and surface examinations for the Fourth ISI interval face hardship when they were performed during previous ISI intervals. (c) Is there any trending program for the three benign indications noted during Third ISI Interval?

Due to the configuration of the RPV nozzles as they penetrate the biological shield wall, the weld area accessible for the Code-required examinations is approximately the top one-third of the weld outside diameter. Explain why the accessible one-third of the weld cannot be inspected for the Code-required surface examination.

RESPONSE:

a) Two indications identified in the hot leg "B" safe end on the nozzle side were evaluated to Table IWB-3514-2 and were found to be within the ASME Code allowable values. One indication was identified in the cold leg "C" nozzle side cladding and was evaluated to Table IWB-3514-1. This indication was also found to be within the ASME Code allowable values.

b) For the Third Ten-Year Interval, relief was granted from performing the surface examination under Relief Request No. 32. In lieu of the surface examination, a VT-2 examination was performed from the refueling floor through the access hatch. A surface examination was performed in the Second Ten-Year Interval on the accessible portions. This examination did not identify any indications.

c) The indications identified were recorded and evaluated as acceptable relative to ASME Code requirements. Therefore, they do not require trending, but information relative to the size, shape, and location will be available to personnel performing future examinations.

Additional details regarding approval of the similar relief request for the Third Ten-Year Interval (TAC No. MB1541) are available within previously docked correspondence.

Request for Relief No. RR-08

(Previously approved during the Third Interval under TAC No. M89997 dated March 1, 1995, and TAC No. MA3481, dated April 8, 1999).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested relief from performing Code-required VT-3 visual examination of the reactor vessel interior during each inspection period.

The licensee proposes to perform the Code-required VT-3 visual examination of the reactor vessel interior during the third inspection period and prior to the third inspection period should the reactor vessel lower internals be removed for inspection, maintenance, or repair activities. In order for the proposed alternative to be evaluated, please provide the following:

Performance of visual examinations of the reactor vessel interior when the reactor vessel is disassembled for a normal refueling outage provides for an extremely limited examination. The lower internals and core barrel remain installed during a normal refueling outage, which generally limits the examination to the reactor vessel flange surface and inside nozzle surfaces. Please explain how the B-N-2 and B-N-3 inspection activities for the reactor vessel internals during each inspection period are performed without removing the reactor vessel internal components.

Recent performance of these visual examinations during Refueling Outage 20 as part of the Third Ten-Year ISI interval identified no unacceptable conditions or indications that might warrant performance of these examinations on the Code-required periodicity. This is not adequate to assume that any future inspection will not find an unacceptable condition and an acceptable level of quality will be achieved by the proposed inspection periodicity. Please demonstrate that a Code-required equivalent level of quality will be achieved by the proposed inspection frequency.

RESPONSE:

The subject relief request is for Examination Category B-N-1, which is required to be completed on the accessible areas each refueling outage. Examination Category B-N-2, Item Numbers B13.50 and B13.60, are for interior attachments within the beltline and beyond the beltline region, which are inaccessible with the core barrel in place. Examination Category B-N-3, Item Number B13.70, requires the core barrel to be removed to facilitate the examination. Examinations for B-N-2 and B-N-3 are normally performed coincident with the reactor vessel examination when the core barrel and lower internals are removed at the end of the interval.

Relief Request No. 8 states that the proposed examination frequency provides an acceptable level of quality and safety, based on the extremely limited examination that can be performed with the core barrel and lower internals installed. HBRSEP, Unit No. 2, proposes to perform the B-N-1 and

B-N-2 examinations each outage that the lower internals and core barrel are removed. The statements in Relief Request No. 8, pertaining to examinations performed in Refueling Outage 20 are not the justification for the proposed alternative. This information is considered relevant to the current condition of the reactor vessel interior.

For additional details, refer to correspondence associated with the approval of the similar relief request for the Third Ten-Year Interval (TAC Nos. M89997 and MA3481).

Request for Relief No. RR-10

(Previously approved during the Third Interval under TAC No. MA4635, dated July 15, 1999).

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested relief from the Code-required actions to be taken when leakage occurs at a bolted connection other than a gaseous system during the conduct of a system pressure test.

The licensee proposes an alternative similar to Code Case N-566-1. In order for the proposed alternative to be acceptable, please provide the following:

The proposed alternative does not address actions that should be taken to stop the leakage. Please explain what actions will be taken when the leak from the joint does not stop.

RESPONSE:

This relief request specifically identifies the actions that are necessary to address bolted connection removal required by IWA-5250 of the ASME Code. The Code requires removal of a bolt, closest to the source of the leakage, when leakage occurs at a bolted connection, and prescribes the actions necessary if degradation is identified. The Code does not specifically address the actions necessary to stop leakage at a bolted connection, since such leakage may have a variety of sources. Plant processes (procedures) are in place to address the leakage source, such as generation of a corrective maintenance work order for leakage or evidence of leakage. This relief request is not directed at relief from correcting leakage sources, but is intended to address the actions necessary to address leakage identified at bolted connections, and required actions to be performed at the bolted connection, as required by IWA-5250, "Corrective Action."

Request for Relief No. RR-11

(Previously approved during the Third Interval under TAC No. MA9602, dated March 15, 2001).

In accordance with the telephone discussion held on January 22, 2002, between HBRSEP, Unit No. 2, personnel and NRC staff personnel, Relief Request No. RR-11 has been revised. The revised Relief Request No. RR-11 is provided in Attachment II.

Request for Relief No. RR-12

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested relief from extending the pressure retaining boundary during the system leakage tests conducted at or near the end of each inspection interval to Class 1 pressure retaining components within the system boundary.

The Class 1 system boundary during leakage tests will be maintained in a normal, operational alignment with items identified within Table 1 constituting exceptions to the Code-required boundary. The VT-2 visual examination will extend to the Class 1 boundary. In order for the proposed alternative to be evaluated, please provide the following:

The title of the relief request refers to hydrostatic test and the relief is requested for system leakage tests. The basis for relief discusses for hydrostatic tests while the conclusion and the proposed alternative refer to system leakage tests. Please clarify these discrepancies.

RESPONSE:

Relief Request No. RR-12 has been revised to correct the inconsistencies. The revised relief request is provided in Attachment II.

Request for Relief Nos. 13 and 14

These relief requests are hereby withdrawn.

Request for Relief No. RR-16

In accordance with the telephone discussion held on January 22, 2002, between HBRSEP, Unit No. 2, personnel and NRC staff personnel, Relief Request No. RR-16 has been revised. The revised Relief Request No. RR-16 is provided in Attachment II.

Request for Relief No. RR-17

REQUEST FOR ADDITIONAL INFORMATION:

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested relief from performing welding and brazing procedure qualification requirements by the Code.

The licensee will use the welding and brazing procedure qualification requirements stated in Code Case N-573. In order for the proposed alternative to be evaluated, please provide the following:

The first bullet stated that the owner performed the procedure qualification test will certify, by signing the PQR, that testing was performed in accordance with Section XI. The Code Case refers to Section IX, "Welding and Brazing Qualification." Clarify.

RESPONSE:

Relief Request No. RR-17 has been revised to correct the inconsistencies. The revised relief request is provided in Attachment II.

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

REVISED RELIEF REQUESTS

Relief Request No. RR-02

Component(s) for Which Relief is Requested

The components applicable to this relief request are the HBRSEP, Unit No. 2, regenerative heat exchanger circumferential head welds, tube sheet-to-shell weld, nozzle-to-vessel welds, nozzle inside radius section, branch connections, socket welds, and associated supports.

Code Examination Requirements

The ASME B&PV Code, Section XI, 1995 Edition with 1996 Addenda, Table IWB-2500-1, Examination Category B-B, "Pressure Retaining Welds in Vessels Other Than Reactor Vessels," Item Nos. B2.51, "Circumferential," and B2.80, "Tubesheet-to-Shell Welds," require volumetric examination of the regenerative heat exchanger vessel head weld and the tube sheet-to-head weld.

Table IWB-2500-1, Examination Category B-D, "Full Penetration Welded Nozzles in Vessels – Inspection Program B," Item Nos. B3.150, "Nozzle-to-Vessel Welds," and B3.160, "Nozzle Inside Radius Section," require volumetric examination of the regenerative heat exchanger nozzle shell welds and inside radius section.

Table IWB-2500-1, Examination Category B-J, "Pressure Retaining Welds in Piping," Item Nos. B9.32, "Branch Pipe Connection Welds Less Than NPS 4," and B9.21, "Circumferential Welds" (less than NPS 4), require surface examination of the inlet, outlet, and intermediate connecting piping welds between the shell courses.

Table IWF-2500-1, Examination Category F-A, "Supports," Item No. F1.40, "Supports Other Than Piping Supports (Class 1, 2, 3 and MC)," requires VT-3 visual examination supports to be examined by the VT-3 method.

Requested Relief

HBRSEP, Unit No. 2, requests relief from ASME B&PV Code, Section XI, 1995 Edition with 1996 Addenda, Table IWB-2500-1, Examination Category B-B, Item Nos. B2.51 and B2.80, Examination Category B-D, Item Nos. B3.150 and B3.160, Examination Category B-J, Item Nos. B9.32 and B9.21, and Examination Category F-A, Item No. F1.40, for the required surface, volumetric, and VT-3 visual examination of the regenerative heat exchanger vessel head weld, tube sheet-to-shell weld, vessel welds, inlet, outlet, intermediate connecting piping welds, inside radius section, and component supports.

Basis for Requested Relief

HBRSEP, Unit No. 2, requests relief in accordance with 10 CFR 50.55a(a)(3)(ii) on the basis that performance of the Code-required examinations associated with the regenerative heat exchanger would result in hardship and unusual difficulty without a compensating increase in the level of quality and safety.

Radiation surveys in the regenerative heat exchanger room identified general area dose rates of 1 to 2 Rem/hour, and heat exchanger contact dose rates of 3 to 4 Rem/hour. As a result, significant worker exposures would result from the preparation for and performance of the Code-required examinations. In order to maintain occupational exposures As Low As Reasonably Achievable (ALARA), relief from these requirements is being requested. Additionally, the VT-2 visual examination performed each refueling outage during pressure testing provides reasonable assurance of structural integrity.

Proposed Alternative Examinations

HBRSEP, Unit No. 2, will perform a VT-3 general visual examination of the regenerative heat exchanger, without insulation removal, once each inspection period, as an alternative examination to the required surface/volumetric examination.

The regenerative heat exchanger pressure-retaining boundary is examined by VT-2 visual examination during pressure testing that is performed during each refueling outage in accordance with Table IWB-2500-1, Examination Category B-P. This Code-required pressure testing provides reasonable assurance of structural integrity.

Implementation Schedule

This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Fourth Ten-Year ISI Interval, which begins on February 19, 2002.

Relief Request No. RR-11

Component(s) for Which Relief is Requested

The components applicable to this relief request are the HBRSEP, Unit No. 2, Class 3 components that are subject to system hydrostatic testing in accordance with Table IWD-2500-1, Examination Category D-B.

Code Examination Requirement

ASME Section XI, 1995 Edition, 1996 Addenda, Table IWD-2500-1, Examination Category D-B, Items D2.20, D2.40, D2.60, and D2.80 require a system hydrostatic test be performed on Class 3 components at the end of the ten-year inspection interval.

Requested Relief

Relief is requested from performance of a hydrostatic pressure test at the end of the Interval. HBRSEP, Unit No. 2, will conduct an end-of-interval system pressure test at nominal operating pressure in the third inspection period on Class 3 systems required to operate during normal reactor operation with a four hour hold time. For Class 3 systems not required to operate during normal reactor operation (e.g., Auxiliary Feedwater), a ten-minute hold time will be performed prior to the VT-2 examination.

The requested relief will authorize the Proposed Alternative Examinations in lieu of the hydrostatic pressure test required by Table IWD-2500-1, Examination Category D-B, Item Nos. D2.20, D2.40, D2.60, and D2.80. This pressure test will also satisfy the third period system leakage test required by Examination Category D-B, Item Nos. D2.10, D2.30, D2.50, and D2.70. The test boundary will be as specified for hydrostatic testing in IWD-5240 of Section XI of the ASME Boiler and Pressure Vessel Code.

Basis for Relief

The NRC has approved the performance of pressure tests at nominal operating pressure in lieu of hydrostatic test pressure. ASME Code Case N-498-1, Alternative Rules for 10-Year Hydrostatic Testing for Class 1, 2, and 3 Systems, has been approved for use in NRC Regulatory Guide 1.147. This Code Case allows an alternative to the hydrostatic pressure test required by Table IWD-2500-1, and requires that a system pressure test at nominal operating pressure be conducted at or near the end of each inspection interval.

The NRC has recognized that the most common causes of failure in Class 3 systems are flow-accelerated corrosion (FAC), microbiologically induced corrosion (MIC), and general corrosion. HBRSEP, Unit No. 2, has in place programs to monitor both FAC and MIC. These programs provide additional assurance that leakage will be detected without reliance on a hydrostatic test performed once every ten years. Leakage from general corrosion is readily apparent to inspectors when performing a VT-2 inspection during system pressure tests and to operations and maintenance personnel during their normal daily routine activities in the plant. Most of the systems that are

subject to the required hydrostatic testing are in operation at normal operating pressure and temperature when reactor is in operation. This provides additional "hold time" for the insulation to saturate and leakage to become readily visible.

Hydrostatic tests are difficult to perform because testing at higher than nominal operating pressure requires unique system lineups, special equipment installation, the removal or blocking of pressure relief devices and, in some cases, pinning of spring hangers. The increase in time, scope, and resources results in additional radiation dose for systems in radiologically controlled areas, which is contrary to ALARA principles. Performing hydrostatic tests can generate a significant amount of wastewater, requiring processing and disposal. The time required to complete the testing, as compared to system pressure tests, results in a significant increase in work scope and required resources, and a potentially extended outage.

Alternative examinations are proposed for Class 3 systems not required to operate during normal reactor operations (Auxiliary Feedwater). This system is designed to allow testing during normal reactor operation by operating the pumps with flow into minimum flow recirculation piping to preclude deadheading of the pumps. The subject pumps are capable of running for extended periods of time under certain low flow conditions to perform their intended safety functions. However, to perform the required testing (4-hour hold time for insulated components) the pumps would be required to run for an extended period of time in the mini-flow condition. Due to excessive heat loading caused by reduced flow through the recirculation lines and the possibility of hydraulic instability, the subject pumps are prohibited by site operating procedures and manufacturers' specifications from running for extended periods of time in the mini-flow condition.

Based on the information above, there is reasonable assurance that the structural integrity and an acceptable level of quality and safety will be maintained during the Fourth Ten-Year ISI Interval.

Proposed Alternative Examinations

HBRSEP, Unit No. 2, will conduct an end-of-interval system pressure test at nominal operating pressure in the third inspection period on systems required to operate during normal reactor operation. Prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for a minimum of four (4) hours. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination. For Class 3 systems not required to operate during normal reactor operation (e.g., Auxiliary Feedwater), prior to performing the VT-2 visual examination, the system shall be pressurized to nominal operating pressure for a minimum of ten (10) minutes. The system shall be maintained at nominal operating pressure during performance of the VT-2 visual examination.

A pressure test at nominal operating pressure will be conducted at the end of interval in the third inspection period. This pressure test will be conducted in lieu of the hydrostatic pressure test required by Table IWD-2500-1, Examination Category D-B, Item Nos. D2.20, D2.40, D2.60, and D2.80. It will also satisfy the third period system leakage test required by Examination Category D-B, Items Nos. D2.10, D2.30, D2.50, and D2.70. The test boundary will be as specified for hydrostatic testing in IWD-5240 of the ASME Boiler and Pressure Vessel Code, Section XI.

Implementation Schedule

This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Fourth Ten-Year ISI Interval, which begins on February 19, 2002.

Relief Request No. RR-12

Component(s) for Which Relief is Requested

The components applicable to this relief request are the HBRSEP, Unit No. 2, Class 1 pressure test boundaries subject to system hydrostatic testing in accordance with IWB-5222, "Boundaries," subsection (b).

Code Examination Requirements

ASME Section XI, 1995 Edition, 1996 Addenda, IWB-5222(b), requires that the pressure-retaining boundary during system leakage test conducted at or near the end of the inspection interval shall extend to all Class 1 pressure-retaining components within the system boundary.

Requested Relief

Relief is requested to not extend the pressure-retaining boundary during system leakage tests conducted at or near the end of the inspection interval for the portions of piping identified in Table 1.

Basis for Relief

Abnormal line-ups or installation of temporary jumpers between two isolation barriers are required in order to extend the test boundary for Class 1 system leakage tests conducted in accordance with IWB-5222(b). These tests are performed in operating MODE 3 and these abnormal line-ups or installation of jumpers would be in violation of Plant Technical Specifications. Additionally, increase in personnel radiation exposure would occur as a result of the installation and removal of temporary jumpers.

RNP design on the Class 1 vents and drains consists of a single isolation valve with a capped end, which is the Class 1 boundary. By opening these single isolation valves to pressurize to the Class 1 boundary, a significant effort would be made during Mode 3 including the use of ladders and scaffold to accomplish the opening, VT-2 and closing of these valves. Once the VT-2 examination was complete, the single isolation valve would be closed, leaving a pressurized slug between the closed valve and the cap. During the next plant shutdown these valves would have to be cycled again when the reactor coolant system was depressurized in order to release the pressurized slug of water.

Sections of piping identified in Table 1 are visually examined for evidence of leakage during the system leakage test even though they will not be pressurized. This would identify any leakage that has occurred when these sections of pipe were under pressure for reasons other than pressure testing requirements of Section XI of the ASME Boiler and Pressure Vessel Code.

Based on the visual examinations performed for evidence of leakage conducted during the system leakage test, there is reasonable assurance that the structural integrity and an acceptable level of quality and safety will be maintained during the Fourth Ten-Year ISI Interval.

Proposed Alternative Examinations

The Class 1 portion of piping shall be pressurized to its normal alignment and the VT-2 examination shall extend to the Class 1 boundary interface.

Implementation Schedule

This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Fourth Ten-Year ISI Interval, which begins on February 19, 2002.

Table 1
Relief Request Number RR-12
Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Dia.	Pipe Sch.	Approx. Length	Examination Category	Drawing No.	Boundary Exception(s)
Drain line below PZR safety valve RC-551A (pipe piece between RC-545 and RC-545A)	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1971, Sheet 2	Valve RC-545 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve RC-545A
Drain line below PZR safety valve RC-551B (pipe piece between RC-546 and RC-546A)	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1971, Sheet 2	Valve RC-546 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve RC-546A
Drain line below PRZ safety valve RC-551C (pipe piece between RC-547and RC-547A)	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1971, Sheet 2	Valve RC-547 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve RC-547A
Vent valve and blind flange on PZR spray line	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1971, Sheet 2	Valve RC-527C remains closed to avoid pressurizing downstream Class 1 pipe piece and blind flange
RCS loop intermediate loop "A" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	1 ft.	B-P	5379-1971, Sheet 1	Valve RC-505A remains closed to avoid pressurizing downstream Class 1 piping and valve RC-505B
RCS loop intermediate loop "B" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	7 in.	B-P	5379-1971, Sheet 1	Valve RC-508A remains closed to avoid pressurizing downstream Class 1 piping and valves RC-508B and RC-542
		0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 in.			
RCS loop intermediate loop "C" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	8 in.	B-P	5379-1971, Sheet 1	Valve RC-515A remains closed to avoid pressurizing downstream Class 1 piping and valves RC-515B and RC-601
		0.75 in.	A376 TP316 SMLS Sch. 160	1 ft.			

Table 1 (Continued)
Relief Request Number RR-12
Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Dia.	Pipe Sch.	Approx. Length	Examination Category	Drawing No.	Boundary Exception(s)
RPV head vent valves and piping	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1971, Sheet 1	Valve RC-567 remains closed to avoid pressurizing downstream Class 1 piping and valves RC-572, RC-571, RC-569, and RC-570
		1 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.			
RCP "A" seal injection drain valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300A remains closed to avoid pressurizing downstream pipe piece and flange
RCP "A" seal leakoff vent valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300C remains closed to avoid pressurizing downstream pipe piece and flange
RCP "A" seal water bypass drain valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-307C remains closed to avoid pressurizing downstream pipe piece and cap
RCP "B" seal injection drain valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300D remains closed to avoid pressurizing downstream pipe piece and flange
RCP "B" seal leakoff vent valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300F remains closed to avoid pressurizing downstream pipe piece and flange
RCP "B" seal water bypass drain valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-307E remains closed to avoid pressurizing downstream pipe piece and cap

Table 1 (Continued)
Relief Request Number RR-12
Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Dia.	Pipe Sch.	Approx. Length	Examination Category	Drawing No.	Boundary Exception(s)
RCP "B" seal water bypass drain valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-307F remains closed to avoid pressurizing downstream pipe piece and cap
RCP "C" seal injection drain valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300G remains closed to avoid pressurizing downstream pipe piece and flange
RCP "C" seal leakoff vent valve and blind flange	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-300J remains closed to avoid pressurizing downstream pipe piece and flange
RCP "C" seal water bypass drain valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-307C remains closed to avoid pressurizing downstream pipe piece and cap
Auxiliary spray valve and downstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	500 ft.	B-P	5379-685, Sheet 1	Valve CVC-311 remains closed to avoid pressurizing downstream piping to check valve CVC-313
CVCS letdown drain valve and downstream cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-460H remains closed to avoid pressurizing downstream pipe piece and cap
CVCS letdown vent valve and downstream cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-460G remains closed to avoid pressurizing downstream pipe piece and cap
CVCS letdown drain valve and downstream cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-685, Sheet 1	Valve CVC-475 remains closed to avoid pressurizing downstream pipe piece and cap
Safety injection loop "1" cold leg injection vent valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Valve SI-875N remains closed to avoid pressurizing downstream pipe piece and cap

Table 1 (Continued)
Relief Request Number RR-12
Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Dia.	Pipe Sch.	Approx. Length	Examination Category	Drawing No.	Boundary Exception(s)
Safety injection loop "2" cold leg injection vent valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Valve SI-875P remains closed to avoid pressurizing downstream pipe piece and cap
Safety injection loop "3" cold leg injection vent valve and cap	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Valve SI-875T remains closed to avoid pressurizing downstream pipe piece and cap
Safety injection loop "1" cold leg injection check valve SI-875A and upstream piping	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Check valve to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves SI-873F, SI-850B, SI-876A, SI-875H, SI-875D, and SI-875M
		8 in.	A376 TP316 SMLS Sch. 120	3 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	62 ft.			
Safety injection loop "2" cold leg injection check valve SI-875B and upstream piping	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Check valve to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves SI-875S, SI-873E, SI-876E, SI-876B, SI-875J, SI-850D, and SI-875E
		8 in.	A376 TP316 SMLS Sch. 120	5 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	52 ft.			
Safety injection loop "3" cold leg injection check valve SI-875C and upstream piping	1	0.75 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5379-1082, Sheet 4	Check valve to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves SI-875R, SI-873D, SI-875L, SI-850F, SI-876C, and SI-875F
		8 in.	A376 TP316 SMLS Sch. 120	8 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	63 ft.			

Table 1 (Continued)
Relief Request Number RR-12
Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Dia.	Pipe Sch.	Approx. Length	Examination Category	Drawing No.	Boundary Exception(s)
Safety injection loop "2" hot leg injection check valve SI-874B and upstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	92 ft.	B-P	5379-1082, Sheet 4	Check valve to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves SI-874C and SI-866B
Safety injection loop "3" hot leg injection check valve SI-874A and upstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	44 ft.	B-P	5379-1082, Sheet 4	Check valve to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves SI-874D and SI-866A
Residual heat removal motor-operated valve RHR-750 and common suction piping	1	14 in.	A376 TP316 SMLS Sch. 140	42 ft.	B-P	5379-1484, Sheet 1	Valve RHR-750 to remain closed to avoid pressuring downstream piping and valve RHR-751, which would result in single valve isolation between hydrostatic test boundary and decay heat removal system

Relief Request No. RR-16

Component(s) for Which Relief is Requested

The components applicable to this relief request are the HBRSEP, Unit No. 2, RPV flange welds.

Code Examination Requirements

ASME Section XI, 1995 Edition, 1996 Addenda, Table IWB-2500-1, Examination Category B-A, Items B1.30 and B1.40, require volumetric examination of the Reactor Pressure Vessel shell-to-flange weld. Examination Category B-A, Item B1.40 requires volumetric and surface examination the head-to-flange weld.

Requested Relief

Relief is requested to use ASME Code Case N-623, *Deferral of Inspections of the Shell-to-Flange and Head-to-Flange Welds of a Reactor Vessel.* This Relief Request allows deferral of these examinations to the end of the interval.

Basis for Relief

Code Case N-623 has been issued in Supplement 4 of the 1998 Code Cases issued by the ASME. This Code Case has not been approved in the latest NRC Regulatory Guide 1.147, Rev. 12. Code Case N-623 is identified as acceptable in Table 1 of the Draft Regulatory Guide DG-1091.

These examinations are performed from the reactor flange, from the reactor ID surface, and from the surface of the reactor head. Personnel performing these examinations are exposed to high levels of radiation. By performing the reactor closure head to flange weld at the end of the interval, mobilization and demobilization can be reduced for preparatory work from three times to one time.

Performing the required surface and volumetric examinations on the reactor vessel closure head circumferential and meridional welds at the end of the interval, as opposed to one-third each period, achieves a reduction in radiation exposure by elimination of repetitive tasks. Each time the welds are examined, scaffolding, insulation removal, and weld prep is required. The preparation activities are reduced when the activity is performed in its entirety, as opposed to performing one-third of the scope each period, due to ultrasonic/magnetic particle examination overlap and set-up/removal time for preparation activities. In addition, performing the examination as one activity at the end of the interval provides consistency in the examination, since it is completed by one set of technicians with the same equipment and transducers rather than three different sets of technicians, equipment, and transducers.

These welds are examined by VT-2 visual examination during pressure tests required by Section XI, Table IWB-2500-1, Examination Category B-P. There have been no unacceptable indications identified by examinations performed in previous intervals.

There is reasonable assurance that the structural integrity and an acceptable level of quality and safety will be maintained during the Fourth Ten-Year ISI Interval based on no unacceptable indications identified in previous examinations and the continuing performance of VT-2 visual examination during pressure tests each refueling outage, as required by Section XI, Table IWB-2500-1, Examination Category B-P.

Proposed Alternative Requirements

The alternate requirements of Code Case N-623 will allow deferral of the inspection of the shell-to-flange welds and head-to-flange welds provided the following conditions are met:

(a) No welded repair/replacement activities have ever been performed on the shell-to-flange or head-to-flange weld.
(b) Neither the shell-to-flange weld nor the head-to-flange weld contains identified flaws or relevant conditions that currently require successive inspections in accordance with IWB-2420(b).
(c) The vessel is not in the first inspection interval.

Implementation Schedule

This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Fourth Ten-Year ISI Interval, which begins on February 19, 2002.

Relief Request No. RR-17

Requirement(s) for Which Relief is Requested

The requirements applicable to this relief request are the HBRSEP, Unit No. 2, welding and brazing procedure qualification requirements.

Code Requirements

The ASME B&PV Code, Section XI, 1995 Edition with 1996 Addenda, Article IWA-4000, "Repair/Replacement Activities," including IWA-4440, "Welding and Welder Qualification (Including Welding Operators)," provides welding and brazing procedure qualification requirements.

Relief Requested

HBRSEP, Unit No. 2, requests relief from the ASME B&PV Code, Section XI, 1995 Edition with 1996 Addenda, IWA-4000, including IWA-4440, regarding welding and brazing procedure qualification requirements.

Basis for Relief

HBRSEP, Unit No. 2, requests relief to authorize the Proposed Alternative Requirements pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternatives provide an acceptable level of quality and safety.

A substantial number of welding and brazing procedures are required to be qualified, and each procedure receives a Procedure Qualification Record (PQR). Provided that conservative and specific administrative processes are established, there is no adverse effect on safety or quality by allowing a PQR qualified by one Owner to be used by another Owner. HBRSEP, Unit No. 2, would intend to implement an administrative process that is consistent with that provided by ASME Code Case N-573, "Transfer of Procedure Qualification Records Between Owners, Section XI, Division 1."

Proposed Alternative Requirements

In lieu of the Code-required repair/replacement activities specified for welding and brazing procedure qualification requirements HBRSEP, Unit No. 2, would intend to implement an administrative process that is consistent with that provided by ASME Code Case N-573, "Transfer of Procedure Qualification Records Between Owners, Section XI, Division 1." Specifically, a PQR qualified by one Owner may be used by another Owner provided the following requirements are met:

- The Owner that performed the procedure qualification test will certify, by signing the PQR, that testing was performed in accordance with Section IX.
- The Owner that performed the procedure qualification test will certify, in writing, that the procedure qualification was conducted in accordance with a Quality Assurance Program that satisfies the requirements of IWA-1400.
- The Owner accepting the completed PQR will accept responsibility for obtaining any additional supporting information needed for WPS development.
- The Owner accepting the completed PQR will document, on each resulting WPS, the parameters applicable to welding. Each WPS will be supported by all necessary PQRs.
- The Owner accepting the completed PQR will accept responsibility for the PQR. Acceptance will be documented by the Owner's approval of each WPS that references the PQR.
- The Owner accepting the completed PQR will demonstrate technical competence in application of the received PQR by completing a performance qualification test using the parameters of a resulting WPS.
- The Owner may accept and use a PQR only when it is received directly from the Owner that certified the PQR.
- Use of this administrative process will be shown on the NIS-2 form documenting welding and brazing.

Implementation Schedule

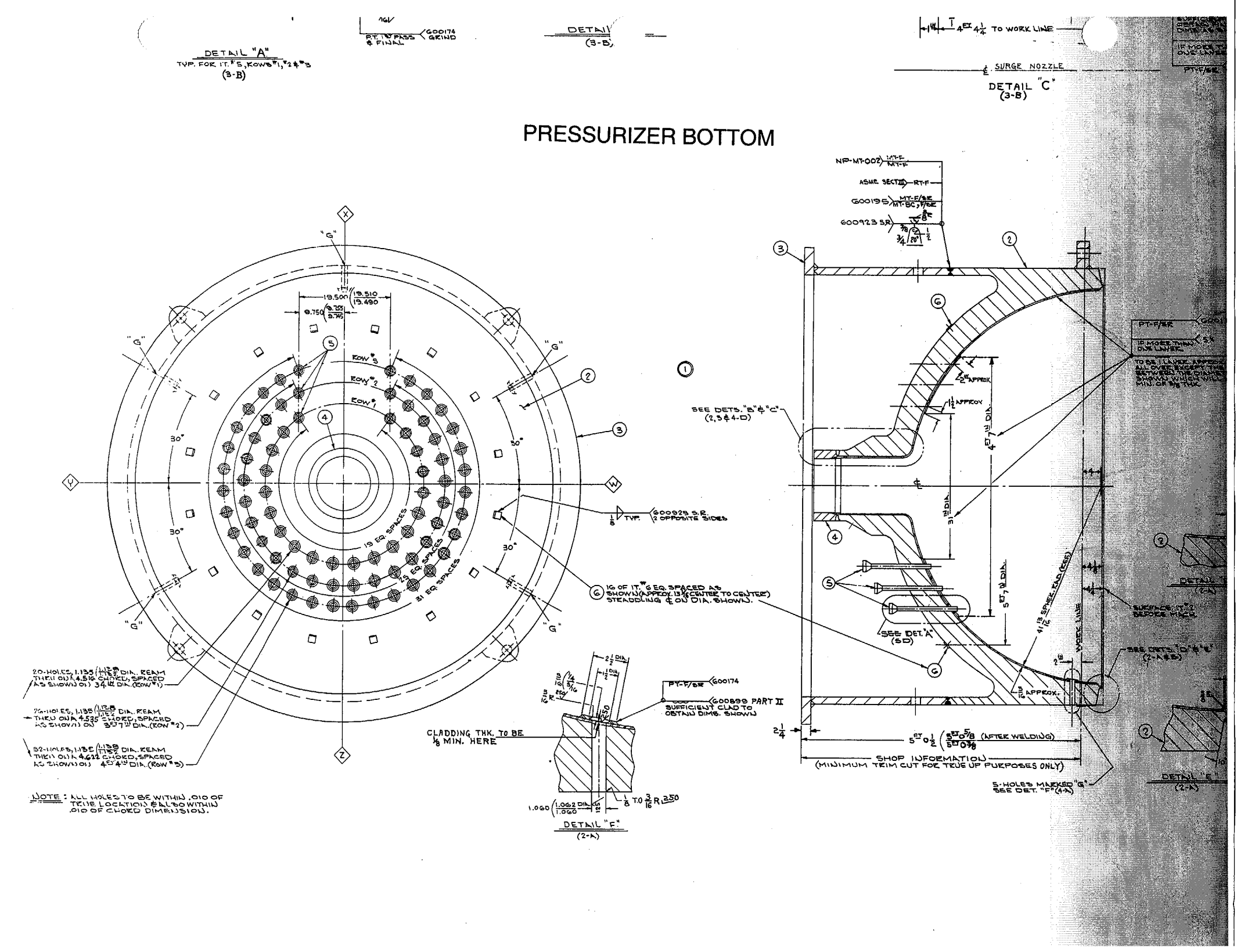
This relief is requested for and will be implemented in the HBRSEP, Unit No. 2, Fourth Ten-Year ISI Interval, which begins on February 19, 2002.

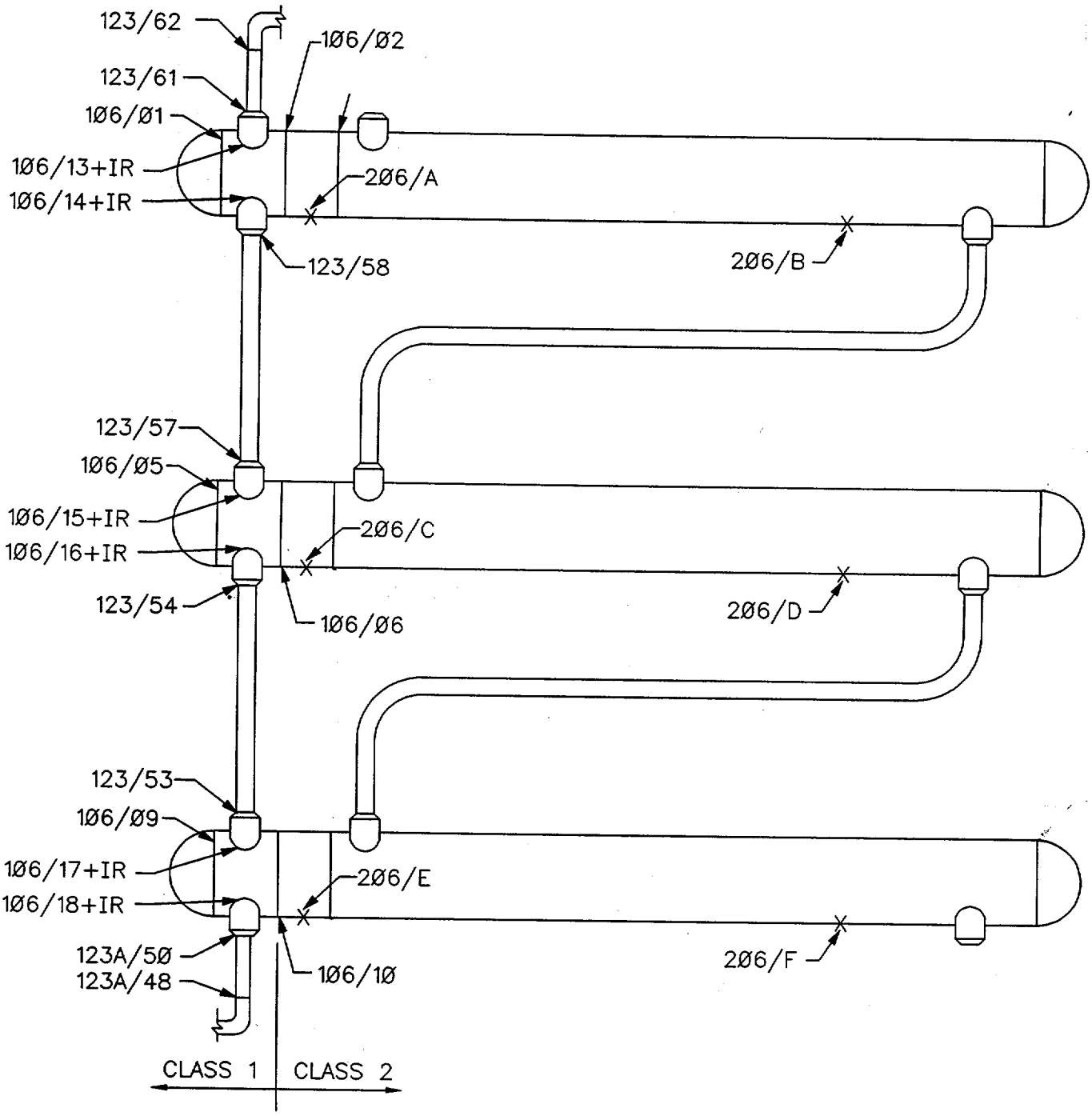
United States Nuclear Regulatory Commission
Attachment III to Serial: RNP-RA/02-0036
4 Pages

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

DRAWINGS

PRESSURIZER BOTTOM





V	DATE	DESCRIPTION	ESP DWN	DSN	CHK	DV	DPE	DPPE

PROFESSIONAL ENGINEER:

QUALITY LEVEL: SAFETY RELATED

CAROLINA POWER & LIGHT COMPANY
NUCLEAR ENGINEERING DEPARTMENT

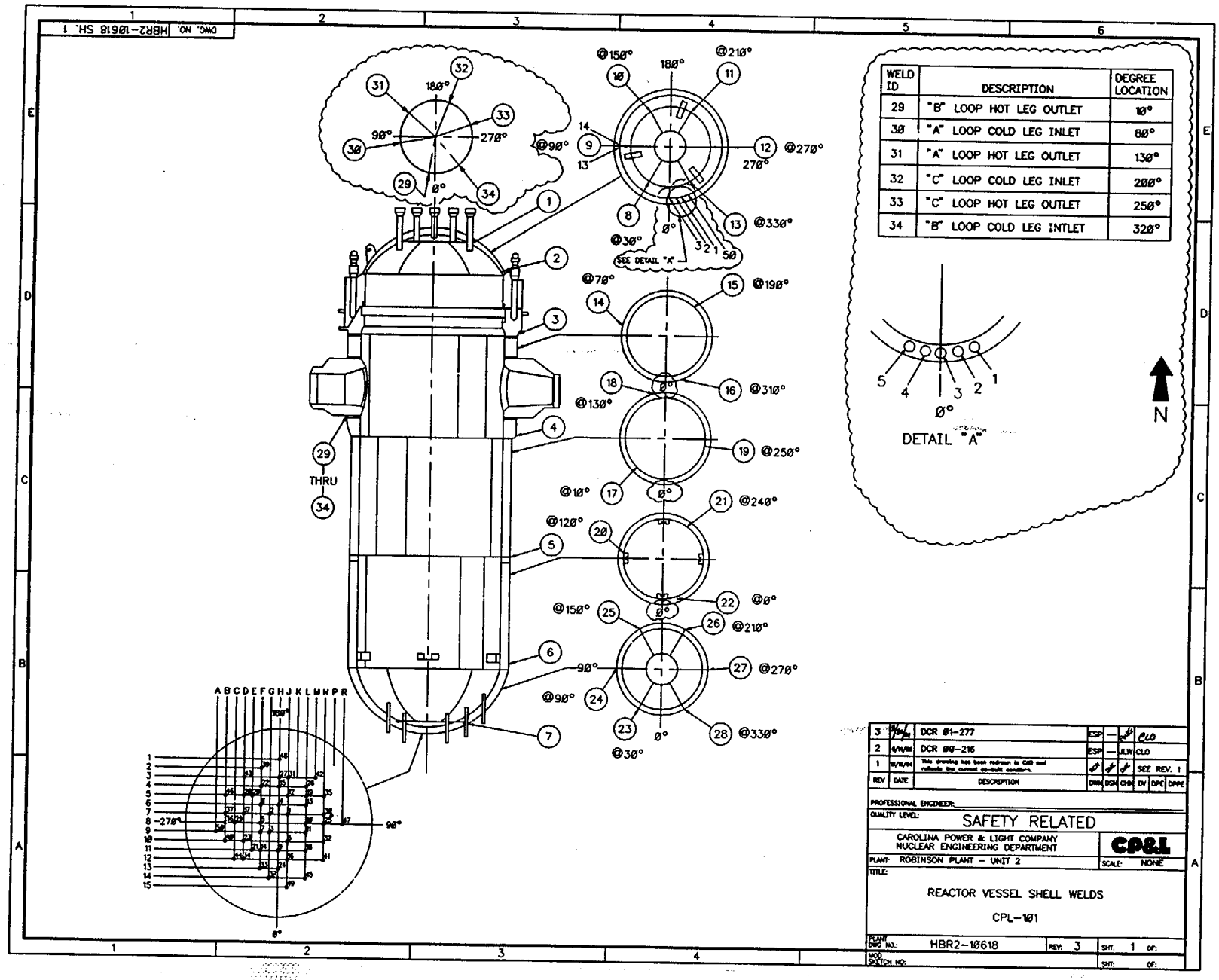
CP&L

PLANT: ROBINSON NUCLEAR PLANT – UNIT 2 SCALE: NONE

TITLE:

REGENERATIVE HEAT EXCHANGER

DWG NO.:	REV:	SHT:	OF:
SK-RNP-ADMIN-Ø2Ø2		SHT: 1	OF:



WELD ID	DESCRIPTION	DEGREE LOCATION
29	"B" LOOP HOT LEG OUTLET	10°
30	"A" LOOP COLD LEG INLET	80°
31	"A" LOOP HOT LEG OUTLET	130°
32	"C" LOOP COLD LEG INLET	200°
33	"C" LOOP HOT LEG OUTLET	250°
34	"B" LOOP COLD LEG INTLET	320°

REV	DATE	DESCRIPTION	DRN	DSN	CHK	EV	DPE	DPPE
3	11/1/94	DCR 81-277	ESP	—	JLW	CLO		
2	4/9/93	DCR 88-216	ESP	—	JLW	CLO		
1	10/15/84	This drawing has been redrawn in CAD and reflects the current as-built condition.	JP	JP	JP	SEE REV. 1		

PROFESSIONAL ENGINEER:

QUALITY LEVEL: SAFETY RELATED

CAROLINA POWER & LIGHT COMPANY
NUCLEAR ENGINEERING DEPARTMENT

CP&L

PLANT: ROBINSON PLANT - UNIT 2

SCALE: NONE

TITLE:

REACTOR VESSEL SHELL WELDS

CPL-101

PLANT DWG NO.: HBR2-10618 REV: 3 SHT. 1 OF:

MOD SKETCH NO: SHT: OF: