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PSEG
Nuclear L.L.C.

10 CFR 50.55a

LR-N09-0168
July 28, 2009

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Response to Request for Additional Information Regarding Relief Request Associated with the Second Inservice Inspection (ISI) Interval

References:
1) Letter from Jeffrie Keenan (PSEG Nuclear LLC) to USNRC, "Submittal of Relief Request Associated with the Second Inservice Inspection (ISI) Interval," dated December 11, 2008
2) Email from R. B. Ennis (USNRC) to J. Keenan (PSEG Nuclear LLC), "Revised Draft RAI - Hope Creek Relief Request HC-I2-RR-A25 (TAC ME0230)," dated June 9, 2009

In Reference 1, PSEG Nuclear LLC (PSEG) submitted relief request HC-I2-RR-A25 for Hope Creek Generating Station (HCGS), requesting relief from specific requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components. Relief request HC-I2-RR-A25 applies to the second 10-year inservice inspection (ISI) interval which ended on December 12, 2007.

In Reference 2, the NRC requested additional information. Attachment 1 to this letter provides PSEG's response.

There are no commitments contained in this letter.

A047
NRR

Should you have any questions regarding this submittal, please contact Mr. Paul Duke at 856-339-1466.

Sincerely,

Jeffrie Keenan
Manager - Licensing
PSEG Nuclear LLC

Attachment
1. Response to Request for Additional Information

cc: S. Collins, Regional Administrator – NRC Region I
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector - Hope Creek
P. Mulligan, Manager IV, NJBNE
L. Marabella, Corporate Commitment Tracking Coordinator
T. Devik, Hope Creek Commitment Tracking Coordinator

DRAFT REQUEST FOR ADDITIONAL INFORMATION

RELATED TO RELIEF REQUEST HC-I2-RR-A25

FOR SECOND TEN-YEAR INSERVICE INSPECTION INTERVAL

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 BACKGROUND

By letter dated December 11, 2008, (Agency wide Documents Access and Management System (ADAMS) Accession No. ML083590292) PSEG Nuclear LLC (the licensee), submitted Relief Request (RR) HC-I2-RR-A25 for Hope Creek Generating Station (HCGS). The licensee requested relief from specific requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components* for HCGS. RR HC-I2-RR-A25 applies to the second 10-year in-service inspection (ISI) interval. The code of record for the start of the HCGS second ten-year ISI Program interval is the ASME Code, 1989 Edition, without Addenda. However, beginning with the third period of the second 10-year ISI interval, PSEG elected to perform a mid-interval update to the 1998 Edition through 2000 Addenda of the ASME Code, Section XI. The use of the later ASME Code Edition was approved in a safety evaluation (SE) issued by the Nuclear Regulatory Commission (NRC) on December 23, 2004 (ADAMS Accession No. ML043580369).

In accordance with Section 50.55a(g)(5)(iii) of Title 10 *Code of Federal Regulations* (10 CFR) the licensee has submitted RR HC-I2-RR-A25 covering several ASME Code Class 1 and Class 2 component weld examinations. The ASME Code requires that 100 percent of the examination volumes described in ASME Code, Section XI, Tables IWB-2500-1 and IWC-2500-1 be completed. The licensee has claimed that 100 percent of the ASME Code-required volumes are impractical to obtain at HCGS. 10 CFR 50.55a(g)(5)(iii) states that when licensees determine that conformance with ASME Code requirements is impractical at their facility, they shall submit information to support this determination.

The NRC staff, with technical assistance from Pacific Northwest National Laboratory, has reviewed the information the licensee provided that supports the subject RR and would like to discuss the following issues to clarify the submittal.

2.0 REQUEST FOR ADDITIONAL INFORMATION

2.1 HC-I2-RR-25 (Part A), ASME Code, Section XI, Category B-A, Pressure Retaining Welds in Reactor Vessel

2.1.1 Clarify, whether the reactor pressure vessel (RPV) longitudinal welds contained in HC-I2-RR-[A]25 had been examined previously in the second 10-year ISI interval or whether RR-B1 submitted by letter dated May 11, 1998, as supplemented by letters dated June 16 and October 25, 1999, was requested prior to examining the subject RPV longitudinal welds in the second 10-year ISI interval.

Response:
The longitudinal seam welds contained in HC-I2-RR-A25 (Reference 1) Table 1 were inspected during refueling outage RF14 (Fall 2007). The welds were not inspected previously in the second 10-year ISI interval.

2.1.2 State whether the examinations that were performed from the inside of the RPV were conducted using procedures that had been successfully qualified through performance demonstration requirements of ASME Code, Section XI, Appendix VIII. Also, state whether any other longitudinal welds were examined to the full requirements of the ASME Code (using performance demonstrated procedures) and whether any indications were detected during any of the examinations.

Response:
Examinations of the Category B-A pressure-retaining welds listed in Reference 1 Table 1 were performed from the inside of the RPV using procedures that had been successfully qualified through performance demonstration requirements of ASME Code, Section XI, Appendix VIII. The following longitudinal welds were also examined using procedures that had been successfully qualified through performance demonstration requirements of ASME Code, Section XI, Appendix VIII:

Table 2.1.2-1

Sum#	Component ID	Description	ASME Cat	Exam Outage
100040	RPV1-W11-1	LONGITUDINAL SEAM AT 30 DEG	B-A	RF14
100045	RPV1-W11-2	LONGITUDINAL SEAM AT 150 DEG	B-A	RF14
100050	RPV1-W11-3	LONGITUDINAL SEAM AT 270 DEG	B-A	RF14
100066	RPV1-W13-1	LONGITUDINAL SEAM AT 35 DEG	B-A	RF13
100067	RPV1-W13-2	LONGITUDINAL SEAM AT 155 DEG	B-A	RF13
100068	RPV1-W13-3	LONGITUDINAL SEAM AT 275 DEG	B-A	RF13
100070	RPV1-W14-1	LONGITUDINAL SEAM AT 90 DEG	B-A	RF13
100075	RPV1-W14-2	LONGITUDINAL SEAM AT 210 DEG	B-A	RF13
100080	RPV1-W14-3	LONGITUDINAL SEAM AT 330 DEG	B-A	RF13
100085	RPV1-W15-1	LONGITUDINAL SEAM AT 18 DEG	B-A	RF13
100090	RPV1-W15-2	LONGITUDINAL SEAM AT 138 DEG	B-A	RF13
100095	RPV1-W15-3	LONGITUDINAL SEAM AT 258 DEG	B-A	RF13

No recordable indications were detected during the examinations.

2.1.3 Relief request HC-I2-RR-25 provided Figure 4 as a supporting sketch to demonstrate that the RPV closure head Weld RPV1-W20 cannot be examined to the full extent required by the ASME Code. However, the dimensions on this figure are not legible. Please re-submit the drawing with legible dimensions.

Response:
An updated sketch for RPV closure head weld RPV1-W20 is provided in Figure 2.1.3-1.

2.1.4 The licensee stated in Table 1 of the submittal that the required examination volumes for RPV longitudinal welds was 78%, per the previous NRC-approved relief (cited above). However, a review of the NRC Safety Evaluation dated February 3, 2000, does not indicate that the ASME Code requirement of essentially 100% (as defined in ASME Code Case N-460) for the examination volume of the subject welds has been reduced.

The licensee should explain why it is believed that the required examination volume is 78%, as opposed to 100%, as stated in ASME Code.

Response:
The ASME Code requires volumetric examination of essentially 100% (as defined in ASME Code Case N-460) of the length of RPV longitudinal shell welds, as defined by Figure IWB-2500-2. The Required Examination Volume in Reference 1 Table 1 refers to the estimated coverage in RR-B1.

2.2 **HC-I2-RR-25 (Part B), ASME Code, Section XI, Examination Category B-D, Item B3.90, Full Penetration Welded Nozzles in Vessels**

The coverage sketch included in the licensee's submittal for all Examination Category B-D nozzle-to-vessel welds is labeled as "typical". Please re-submit cross-sectional sketches for each type of nozzle-to-vessel weld listed in Table 1, and/or provide full written descriptions, describing the nozzle geometries, the ASME Code-required volumes, and areas of completed coverage (near surface, inner 15 percent, and full volume) for each of the techniques used on these welds. Summarize the scanning directions and techniques, list the materials for the base metal and weld, and clarify whether the methods used have been qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

Response:
Cross-sectional sketches for each type of nozzle-to-vessel weld listed in Reference 1 Table 1 are provided in Figures 2.2-1 through 2.2-7. The scanning directions and techniques are listed in Table 2.2-1 below. The base metal for the reactor vessel shell and head is SA-533 Grade B Class 1. Base metal for the nozzles is SA-508 Class 2 Specified weld materials for carbon steel are SA-558, SA-559, or SA-233.

Except where noted, the methods used have been qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

Table 2.2-1

Sum#	Comp ID	Description	Scan Direction	Scan Angle	Comments	Technique Coverage	Qualified
100200	RPV1-N2B	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 60 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100205	RPV1-N2C	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 90 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100235	RPV1-N2J	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 300 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100240	RPV1-N2K	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 330 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100265	RPV1-N4A	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 30 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100270	RPV1-N4B	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 90 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100275	RPV1-N4C	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 150 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan. Weld pad from nozzle N11C extended from toe of weld back 25 inches. Exam was limited from 91 to 110 inches circumferentially.	Axial 60° longitudinal - 71% Circ 50° shear- 71%	Yes
100280	RPV1-N4D	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 210 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100285	RPV1-N4E	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 240 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100290	RPV1-N4F	NOZZLE TO SHELL WELD 12" FEEDWATER NOZZLE AT 270 DEGREES	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan. Weld pad from nozzle N11D extended from toe of weld back 25 inches. Exam was limited from 91 to 110 inches circumferentially.	Axial 60° longitudinal - 71% Circ 50° shear- 71%	Yes
100295	RPV1-N5A	NOZZLE TO SHELL WELD 10"CORE SPRAY INLET AT 120 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No

Table 2.2-1

Sum#	Comp ID	Description	Scan Direction	Scan Angle	Comments	Technique Coverage	Qualified
100300	RPV1-N5B	NOZZLE TO SHELL WELD 10"CORE SPRAY INLET AT 240 DEG	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100320	RPV1-N8A	NOZZLE TO SHELL 4" JET PUMP INSTRUMENTATION AT 105 DEGREES	CW, CCW, Upstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100325	RPV1-N8B	NOZZLE TO SHELL 4" JET PUMP INSTRUMENTATION AT 285 DEGREES	CW, CCW, Upstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100330	RPV1-N9A	NOZZLE TO SHELL WELD 4" CRD HYDRAULIC RETURN AT 146 DEGREES	0 to material CW, CCW, Downstream	0°/45°/60°	45°/60° exams performed from vessel shell side only due to nozzle configuration.	Strt. Beam Planar - 100% Strt. Beam Laminar - 64.7% Parallel 45° - 50% Parallel 60° - 50% Transverse 45° - 100% Transverse 60° - 100%	No
100400	RPV1-N17A	NOZZLE TO SHELL 12" LPCI AT 45 DEG	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100401	RPV1-N17B	NOZZLE TO SHELL 12" LPCI AT 135 DEG	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100403	RPV1-N17D	NOZZLE TO SHELL 12" LPCI AT 315 DEG	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100404	RPV1-N6A	NOZZLE TO HEAD 6" HEAD SPRAY NOZZLE	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100405	RPV1-N6B	NOZZLE TO HEAD 6" SPARE HEAD NOZZLE	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes
100406	RPV1-N7	NOZZLE TO HEAD 4" VENT NOZZLE	CW, CCW, Downstream	50°/60°	Examined from shell side only due to blend radii limiting nozzle side scan.	Axial 60° longitudinal - 75% Circ 50° shear- 75%	Yes

2.3 **HC-I2-RR-25 (Part C), ASME Code, Section XI, Examination Category B-G-1, Item B6.40, Reactor Vessel Flange Ligament**

The licensee has included, as Figure 6, a sketch depicting areas of limited scanning. However, insufficient text is provided in order to make use of the drawing. In order to demonstrate impracticality, submit a full written description of how the cladding prevented manual scanning and describe whether smaller diameter search units could be used to scan the ASME Code required area to increase coverage.

Response:
The 1/4-inch drop/step from the lip of the cladding seal surface allows a 3/8-inch land area between the stud hole and the cladding raised seal surface, preventing the transducer from accessing the limited area shown on Reference 1 Figure 6. The examination was performed under a non-PDI procedure and a smaller transducer was not considered at the time of the examination. Smaller transducers will be considered for future examinations to gain more information on the ligament land area between the cladding lip and stud hole. To date, PSEG is unaware of any instance of rejectable indications being found as a result of ASME ligament examinations required by category B-G-1 Item 6.40

2.4 **HC-I2-RR-25 (Part D), ASME Code, Section XI, Examination Category B-J, Item B9.11, Pressure Retaining Welds in Piping NPS 4 inches and Larger**

The coverage sketches included in the licensee's submittal for all ASME Code, Section XI, Examination Category B-J piping welds are not adequate to fully describe impracticality.

a) Provide descriptions of the ultrasonic techniques deployed for each weld examination volume, and the amount of coverage obtained for each of these techniques. Also, provide cross-sectional drawings showing scanning angle coverage obtained. List the materials for the base metal and weld.

Response:
Descriptions of the ultrasonic techniques deployed for each weld examination volume, the amount of coverage obtained for each of these techniques and the materials for the base metal and weld, where available, are listed in Table 2.4-1 below. Profile sketches are provided in Figures 7 through 13 in Reference 1.

Table 2.4-1

Sum#	Comp ID	Description	Scan Direction	Scan Angle	Comments	Technique Coverage	Base metal / Weld
105890	1-BB-28VCA-013-6-R2	PIPE TO REDUCING TEE	CW, CCW, Downstream	45°/60°	No examination from downstream side due to reducing tee configuration. Circumferential scans (clockwise & counter-clockwise) were limited to upstream side only.	Axial US - 50% Axial DS - 50% Circ CW - 50% Circ CCW - 50%	A-358 CL.1 304 / A-403 WP304
108105	1-BC-6DBA-003-21	VALVE TO FLANGE	CW, CCW	45°	Examination limited to clockwise and counter-clockwise scanning due to configuration of valve and flange.	Axial US - 0% Axial DS - 0% Circ CW - 66.67% Circ CCW - 66.67%	Carbon steel
109170	1-BC-12CCA-116-5	PIPE TO REDUCING TEE	CW, CCW, Upstream, Downstream	45°/60°	Examination limited to the upstream side of the weld by the weld and tee configuration.	Axial US - 60.4% Axial DS - 60.4% Circ CW - 100% Circ CCW - 100%	SA-358 CL.1 304L / Root SFA-5.9 ER308L / A-403 WP304
110200	1-BG-4CCA-012-1	WELDOLET TO PIPE	CW, CCW, Upstream	45°/70°	No examination on the upstream side due to weldolet configuration.	Axial US - 50% Axial DS - 50% Circ CW - 50% Circ CCW - 50%	A-182 F304 / Root SFA-5.9 ER308L / SA-312 TP304L
110230	1-BG-4CCA-011-1	WELDOLET TO PIPE	CW, CCW, Upstream	45°/70°	No examination on the upstream side due to weldolet configuration.	Axial US - 50.48% Axial DS - 50.48% Circ CW - 50.48% Circ CCW - 50.48%	A-182 F304 / Root SFA-5.9 ER308L / SA-312 TP304L
110432	1-FC-4DBA-003-7A	PIPE TO FLOW ELEMENT	CW, CCW, Upstream, Downstream	45°/70°	45° shear wave examination was limited due to sock-o-let location in both directions. 70° shear wave exam was limited due to weld crown configuration.	Axial US - 52.50% Axial DS - 52.50% Circ CW - 89.20% Circ CCW - 89.20%	SA-106 Grade B / ERNiCr-3 ENICrFe-3 / SA-182 Grade F304L
110433	1-FC-4DBA-003-7B	FLOW ELEMENT TO PIPE	CW, CCW, Upstream, Downstream	45°/70°	70° shear wave exam was limited due to weld crown configuration. 45° covered circ scan 100%.	Axial US - 52.50% Axial DS - 52.50% Circ CW - 100% Circ CCW - 100%	SA-182 Grade F304 / ERNiCr-3 ENICrFe-3 / SA-106 Grade B
110475	1-FC-4DBA-003-16	ELBOW TO PIPE	CW, CCW, Upstream,	45°/70°	No exam downstream due to welded pipe support on pipe side of weld joint, upstream edge of limitation was positioned on upstream weld toe and extended downstream past downstream weld toe preventing any downstream examination. Magnetic particle exam was performed and limited to 51.846% coverage with no recordable indications.	Axial US - 65.03% Axial DS - 0% Circ CW - 19.58% Circ CCW - 19.58%	Carbon steel

b) As applicable, describe nondestructive examination (NDE) equipment, show accessibility limitations, and discuss whether alternative methods or advanced technologies such as phased array could be employed to maximize ASME Code coverage.

Response:
The limited examinations were completed using manual techniques. The accessibility limitations are discussed in the table above. As new ultrasonic techniques and tooling are qualified to ASME Section XI, Appendix VIII, PSEG reviews the new tooling and techniques to maximize the inspection coverage.

c) Clarify whether the methods used have been qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

Response:
The methods used were qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

2.5 HC-I2-RR-25 (Part E), ASME Code, Section XI, Examination Category C-G, C6.10, Pump Casing Welds

2.5.1 The licensee's current submittal includes a request for limited surface examination coverage of Core Spray Pump Casing Weld CP-206-CSP-W2. This weld was previously submitted for the second interval in RR-C1, Part C, and evaluated in an NRC SE dated February 3, 2000. Based on the licensee's statements, it appears that only 23.4 percent of the required surface coverage was actually completed as opposed to the 73 percent originally stated in RR-C1, Part C. Please confirm that the current request is intended to correct the originally stated surface coverage, the basis for limited coverage remains the same as previously stated, and that any commitments made in RR-C1, Part C remain in place.

Response:
The current request is intended to correct the originally stated surface coverage. The basis for limited coverage remains the same as previously stated. No commitments were made in connection with RR-C1, Part C.

2.5.2 The drawing of the Core Spray Pump included as Figure 19 in the licensee's submittal, does not adequately demonstrate limited accessibility for surface examination of Weld CP-206-CSP-W2. In this drawing, it appears that access to the weld may be sufficient for performing outside surface examination. Please submit further information to demonstrate the inaccessibility, and show the areas where limited coverage has been obtained.

Response:
Photographs showing the limited accessibility between the concrete pedestal and core spray pump CP-206 casing are provided in Figures 2.5.2-1 and 2.5.2-2.

2.6 Request for Relief HC-I2-RR-25 (Part F), ASME Code, Section XI, Examination Category R-A, Risk Informed Piping Examinations

2.6.1 The licensee has provided three drawings that show the coverage obtained for the subject examinations. However, insufficient text is included to describe the conditions that limit ultrasonic scanning in the circumferential directions. Please submit further written description to demonstrate impracticality. In addition, describe the ultrasonic techniques employed; it is unclear whether the examinations were performed using longitudinal and/or shear wave techniques.

Response:
The ultrasonic techniques employed are described in Table 2.6-1 below. All angled scans were performed using shear mode.

Table 2.6.1-1

Sum#	Comp ID	Description	Scan Direction	Scan Angle	Comment	Technique Coverage
105585	1-BB-4VCA-011-1-R1	BRANCH CONNECTION TO PIPE	Downstream, CW, CCW	45°/60°/70°	Downstream access only. No examination performed upstream due to the configuration of the branch connection.	Axial US - 0% Axial DS - 100% Circ CW -US 0% Circ CW -DS 100% Circ CCW -US 0% Circ CCW - DS 100%
105790	1-BB-4VCA-012-1-R1	BRANCH CONNECTION TO PIPE	Downstream, CW, CCW	45°/60°/70°	Downstream access only. No examination performed upstream due to the configuration of the branch connection.	Axial US - 0% Axial DS - 100% Circ. CW -US 0% Circ. CW -DS 100% Circ CW -US 0% Circ CCW - DS 100%
109810	1-BG-6DBA-001-29	PIPE TO VALVE	Upstream, CW, CCW	45°	No exam performed from downstream due to configuration of valve and weld crown.	Axial from US - 89.22% Axial from DS - 0% Circ CW - 71.53% Circ CCW - 71.53%

2.6.2 Also, clarify whether any other welds could have been substituted and examined instead of Welds 1-BB-4VCA-011-1-R1, 1-BB-4VCA-011(2)-1-R1, and 1-BG-6DBA-001-29. If no other welds could have been examined; please explain why.

Response:
As noted in Reference 1 Table 1, the examinations for 1-BB-4VCA-011-1-R1 and 1-BB-4VCA-012-1-R1 were both pre-service examinations. Therefore, no other welds could have been examined.

1-BG-6DBA-001-29 is in a risk segment with two other welds. All welds in the segment have been selected; therefore, no other welds are available for selection.

2.6.3 In addition to the bases for impracticality, state whether any outside diameter surface feature, such as weld crown, diametrical weld shrinkage, or surface roughness conditions caused limited volumetric coverage during the subject piping weld examinations. Discuss the efforts that were used to correct these conditions.

Response:
The weld crown on 1-BG-6DBA-001-29 caused some limitation in volumetric coverage. However, flat topping the pipe to valve weld crown would not provide significantly better coverage, as the valve body taper will still lift the shoe in the limited area.

2.6.4 Clarify whether the methods used to examine the subject piping weld have been qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

Response:

The methods used to examine the subject piping weld have been qualified in accordance with performance demonstration requirements per ASME Code, Section XI, Appendix VIII.

References

1. Letter from Jeffrie Keenan (PSEG Nuclear LLC) to USNRC, "Submittal of Relief Request Associated with the Second Inservice Inspection (ISI) Interval," dated December 11, 2008

Figure 2.1.3-1
Limitation Due to Reactor Vessel Closure Head to Flange Configuration

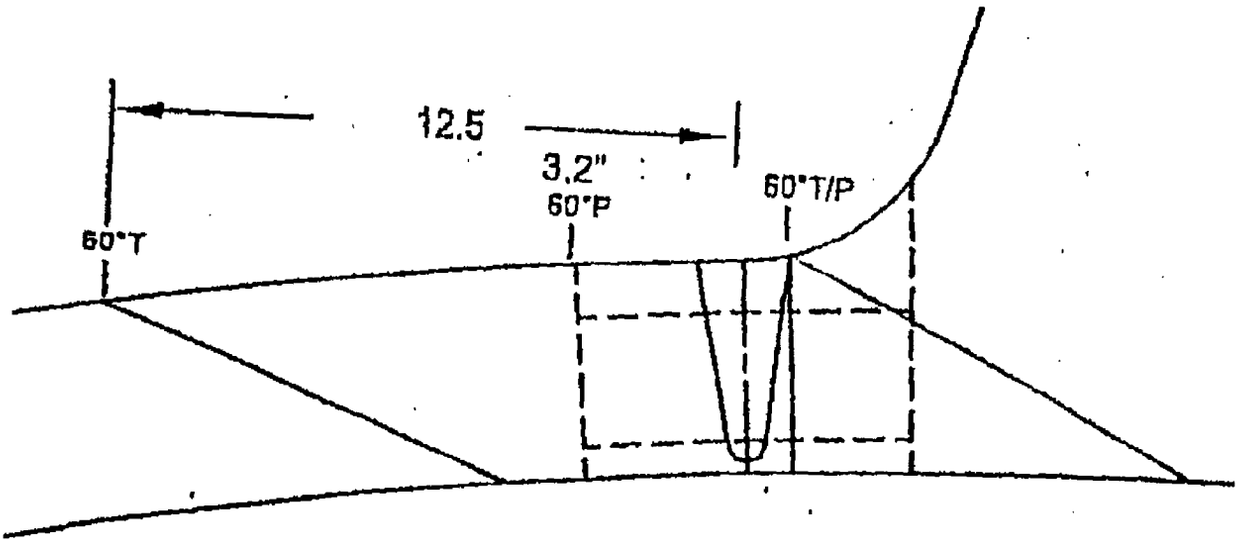


Figure 2.2-1

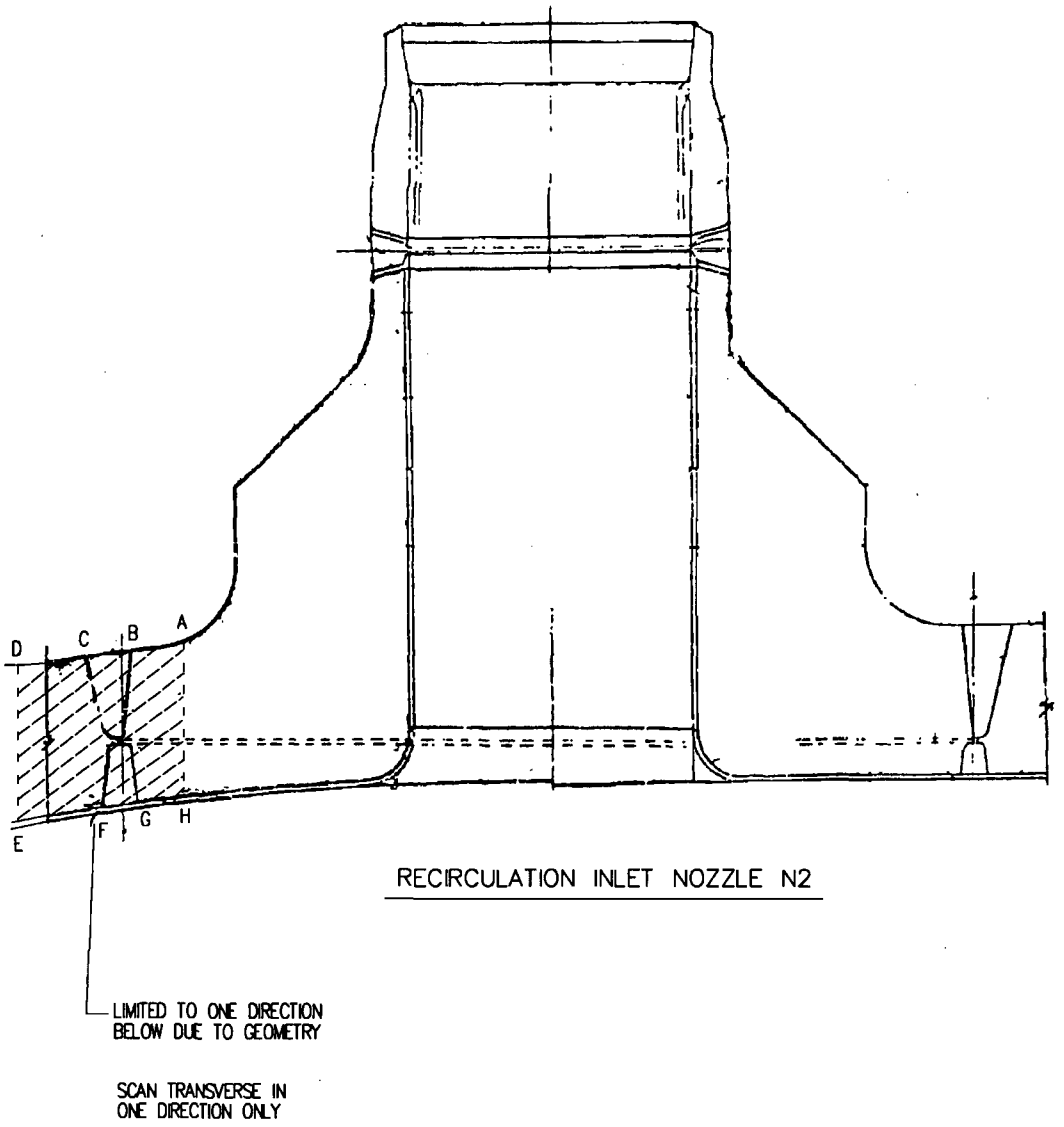
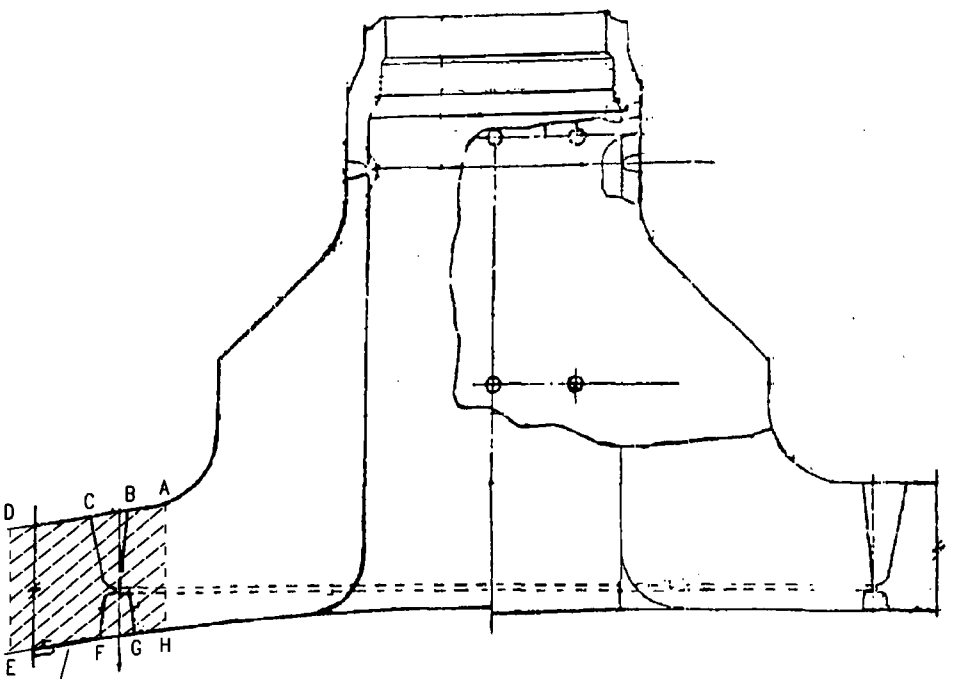

D
C
B
A
E
F
G
H
RECIRCULATION INLET NOZZLE N2
LIMITED TO ONE DIRECTION
BELOW DUE TO GEOMETRY
SCAN TRANSVERSE IN
ONE DIRECTION ONLY

Figure 2.2-2



FEEDWATER NOZZLE ASSEMBLY N4

Figure 2.2-3

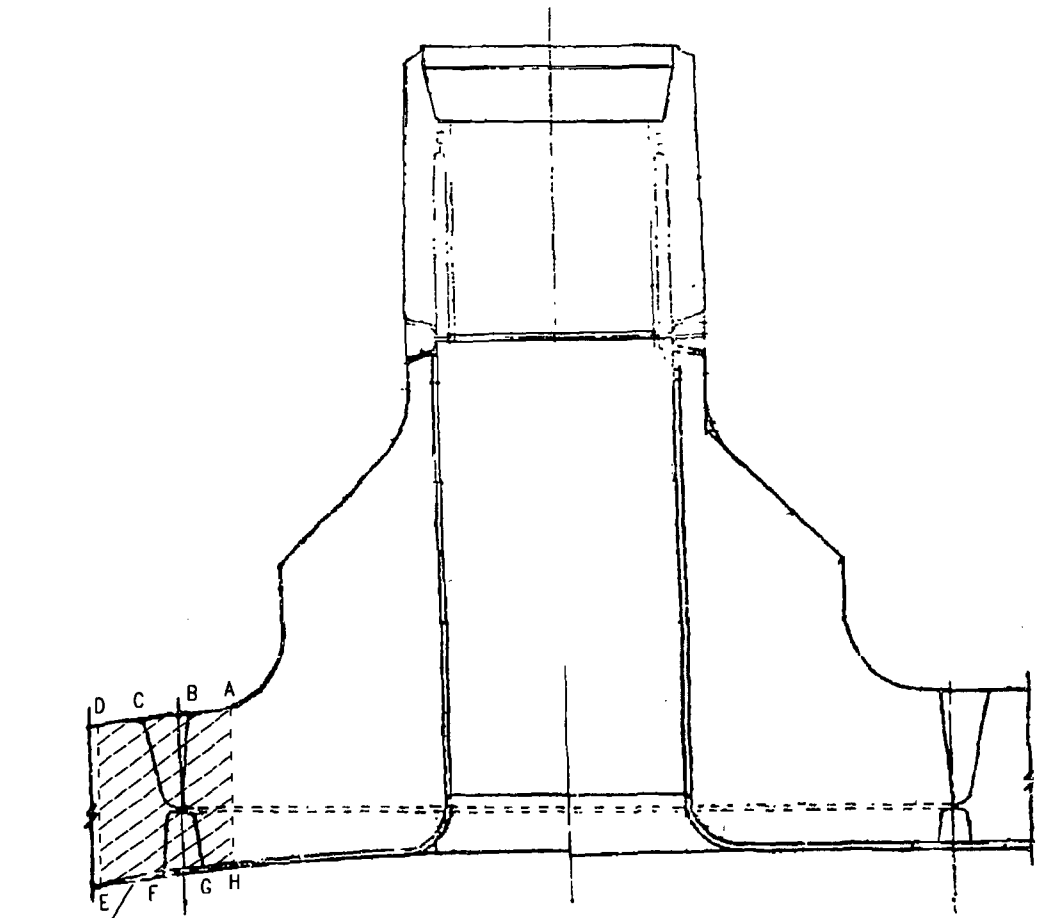
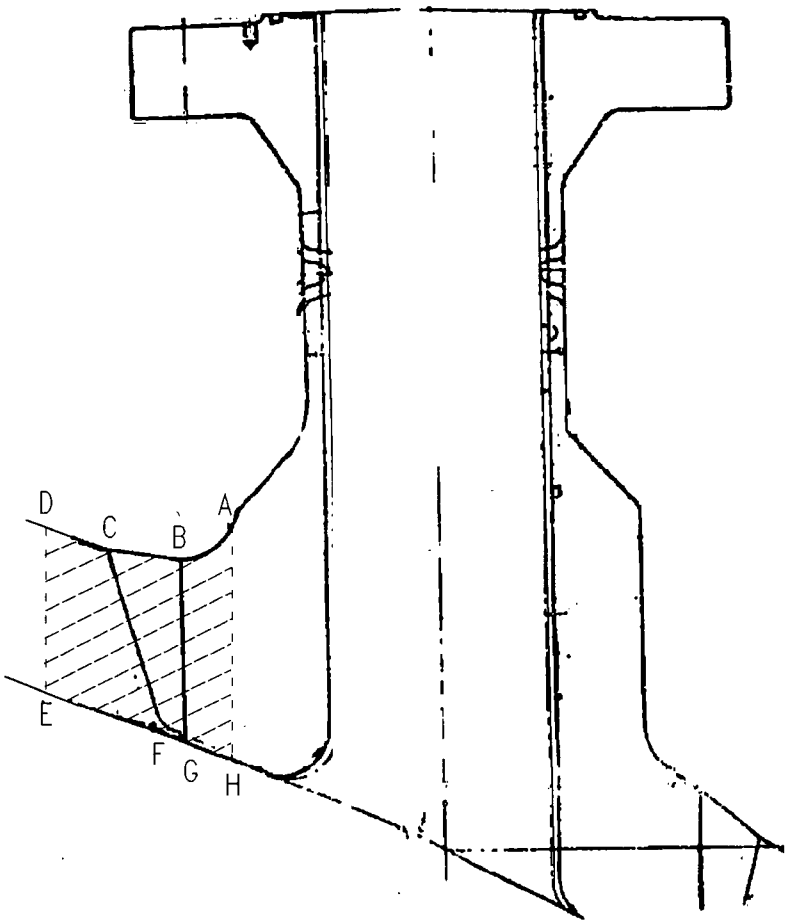
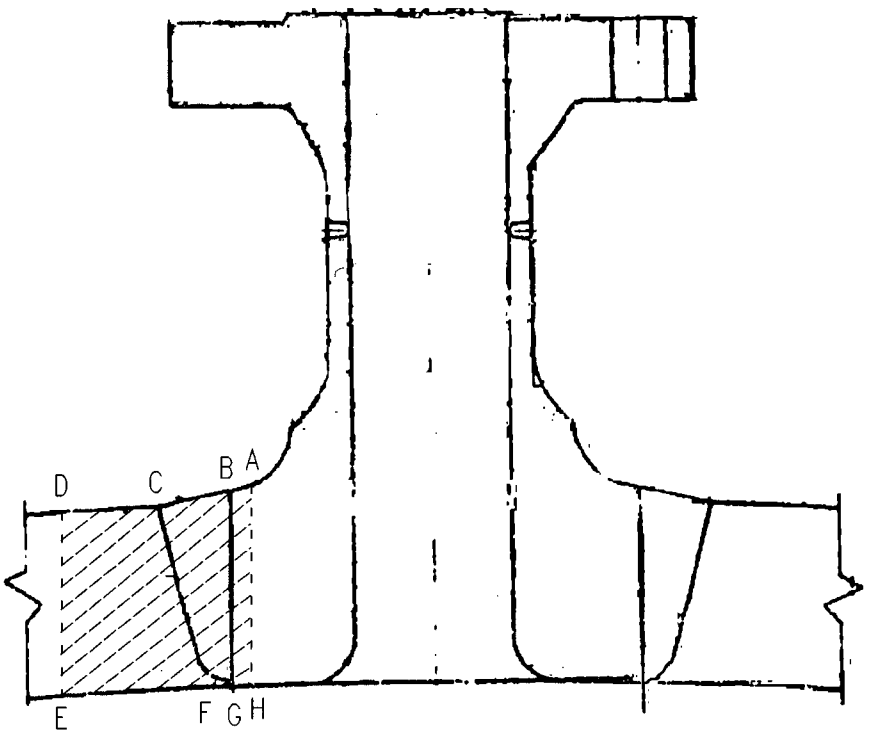

D
C
B
A
E
F
G
H
CORE SPRAY NOZZLE N5
LIMITED DUE TO
NOZZLE GEOMETRY
SCANNED TRANSVERSE IN
ONE DIRECTION ONLY

Figure 2.2-4



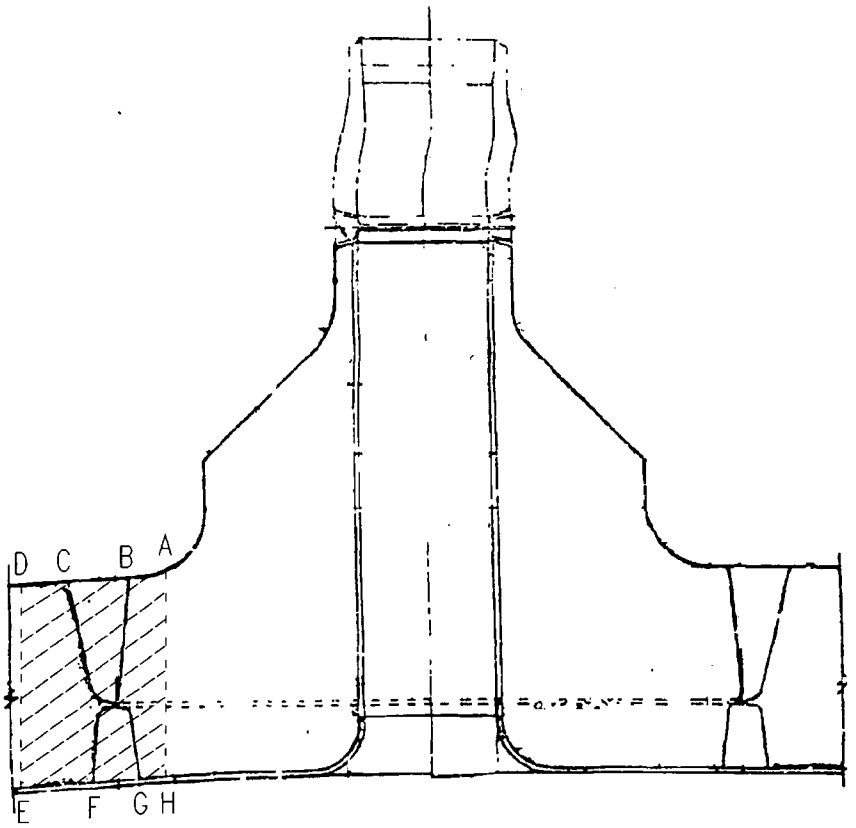
HEAD SPRAY NOZZLE ASSEMBLY N6A

Figure 2.2-5



VENT NOZZLE ASSEMBLY N7

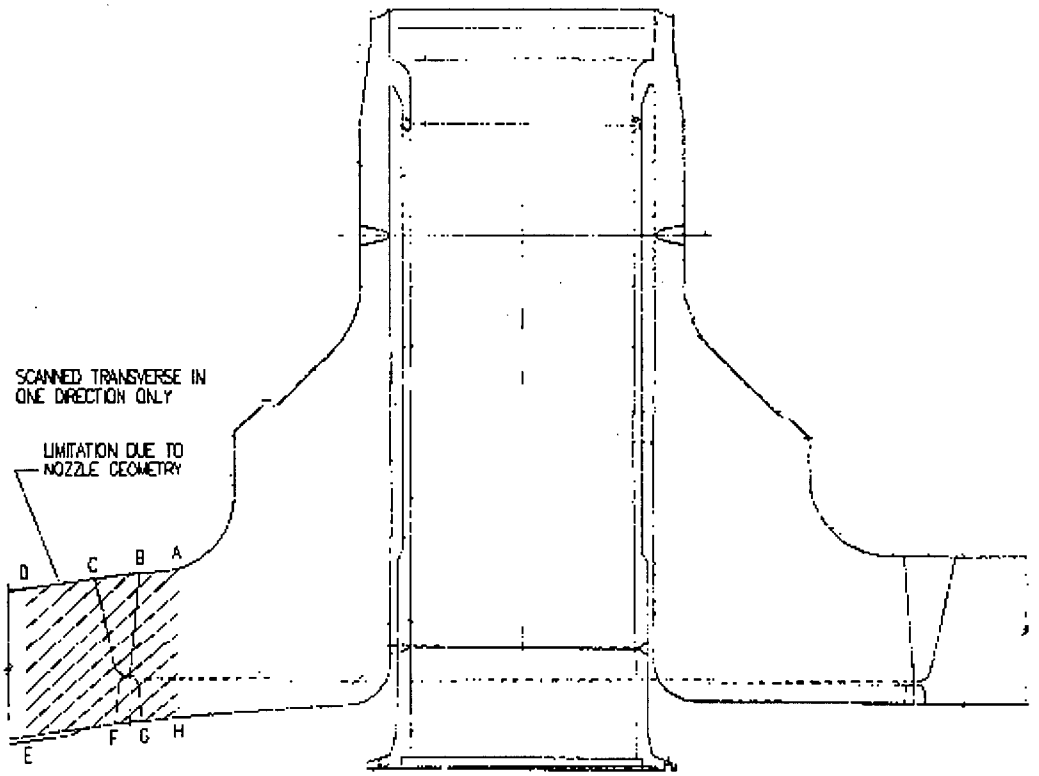
Figure 2.2-6



CONTROL ROD DRIVE AND SYSTEM RETURN NOZZLE N9

JET PUMP INSTRUMENTATION NOZZLE N8

Figure 2.2-7



ASSEMBLY DETAIL LPCI NOZZLE N17

Figure 2.5.2-1
CP206

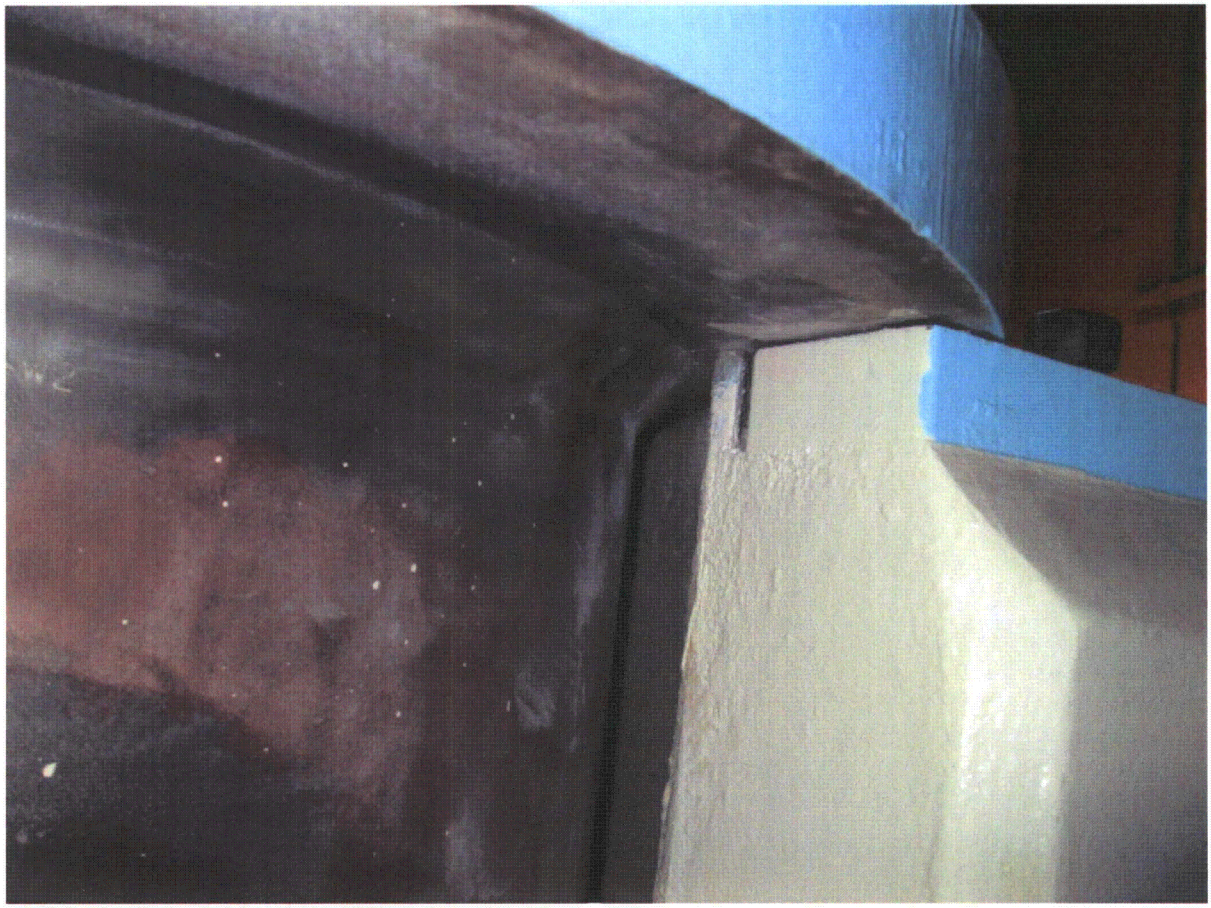


Figure 2.5.2-2
CP206