PSEG Nuclear LLC
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PSEG
Nuclear L.L.C.

10 CFR 50.55a

LR-N08-0266
December 11, 2008

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: Submittal of Relief Request Associated with the Second Inservice Inspection (ISI) Interval

In accordance with 10 CFR 50 55a, "Codes and standards," paragraph (g)(5)(iii), PSEG Nuclear LLC (PSEG) hereby requests NRC approval of the attached request for the second 10-year inservice inspection (ISI) interval for the Hope Creek Generating Station which ended on December 12, 2007. The request addresses examination limitations for exams performed in accordance the requirements of the American Society of Mechanical Engineering (ASME) Boiler and Pressure Vessel Code, Section XI for Class 1 and 2 components.

PSEG requests approval of this request by December 12, 2009.

There are no commitments in this letter or attachment.

If you have any questions or require additional information, please contact Mr. Paul Duke at 856-339-1466.

Sincerely,

Jeffrie Keenan
Manager - Licensing
PSEG Nuclear LLC

Attachment: 10 CFR 50.55a Request HC-I2-RR-A25

A047
NRR

cc: S. Collins, Regional Administrator – NRC Region I
R. Ennis, Project Manager - USNRC
NRC Senior Resident Inspector - Hope Creek
P. Mulligan, Manager IV, NJBNE

10 CFR 50.55a Request Number: HC-I2-RR-A25

Relief Request In Accordance With 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

NOTE:
Hope Creek Second Ten-Year Interval Inservice Inspection (ISI) examinations were conducted between December 13, 1997 (start) and December 12, 2007 (end).

NRC Approved (Yes or No): _____ Date _____

1. ASME Code Component(s) Affected

Code Class:	1, 2
Reference:	IWB-2200, IWB-2500, IWC-2500, Code Case N-578-1 paragraph -2500 Code Case N-460
Examination Categories:	B-A, B-D, B-G-1, B-J, C-G, R-A
Item Numbers:	See Table 1
Description:	Volumetric and surface examination coverage
Component ID:	See Table 1

2. Applicable Code Edition and Addenda

The code of record for the start of the Hope Creek Generating Station (HCGS) Second Ten-Year ISI Program interval is Section XI of the ASME Code, 1989 Edition, without Addenda. Beginning with the Third Period of the interval, PSEG elected to perform a mid-interval update to the 1998 Edition through 2000 Addenda. (Reference 2)

Also commencing with the Third Period of the interval, PSEG invoked a Risk-Informed Inservice Inspection (RISI) program based on EPRI Topical Report TR-112657, Rev. B-A methodology, which was supplemented by Code Case N-578-1. (Reference 3) The first outage of the Third Period was RF12.

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, and 1998 Edition 2000 Addenda, requires examinations on components and welds as specified in Table IWB-2500-1 and IWC-2500-1. Code

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Case N-578-1 requires examinations on risk-informed piping as specified in Table 1 of the Code Case.

PSEG invoked ASME Section XI Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 welds, Section XI Division 1." Code Case N-460 states in part, "... when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%." ASME Code Case N-460 is approved for use by the NRC in Regulatory Guide (RG) 1.147, Revision 15, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1."

The exam categories for this relief request are B-A, B-D, B-G-1, B-J, C-G, and R-A. The applicable code requirements for the relevant item numbers are as follows.

A. Exam Category B-A Pressure Retaining Welds in Reactor Vessels

Code Requirement: Item B1.12 requires essentially 100% volumetric examination, as defined by Figure IWB-2500-2, of all longitudinal reactor pressure vessel (RPV) shell welds. Item B1.40 requires essentially 100% of the head-to-flange weld as defined by Figure IWB-2500-5.

B. Exam Category B-D Full Penetration Welds of Nozzles in Vessels

Code Requirement: Item B3.90 requires essentially 100% volumetric examination, as defined by Figures IWB-2500-7 a through d, of the reactor vessel nozzle-to-vessel welds.

C. Exam Category B-G-1 Pressure Retaining Bolting Greater Than 2 Inches in Diameter

Code Requirement: Item B6.40 requires essentially 100% volumetric examination, as defined by Figure IWB-2500-12, of reactor vessel threads in flange.

D. Exam Category B-J Pressure Retaining Piping Welds

Code Requirement: Items B9.11 and B9.31 require essentially 100% volumetric and surface examinations, as defined by Figures IWB-2500-8, -9, -10, or -11, as applicable, for piping circumferential and branch connection welds.

E. Exam Category C-G Pressure Retaining Welds in Pumps and Valves

Code Requirement: Item C6.10 requires either inside or outside surface examination, as defined by Figure IWC-2500-8 for pump casing welds, including

100% welds in all components in each piping run examined under Examination Category C-F.

F. Exam Category R-A Risk Informed Piping Examinations

Code Requirement: Item R1.20 requires essentially 100% volumetric exams as defined by Figure IWB-2500-8(c). Additionally, the exam volume is expanded to include the area ½ inch beyond each side of the base material thickness transition or counterbore.

4. Basis for Relief:

Pursuant to 10CFR50.55a(g)(5)(iii), relief is requested from ASME XI examination requirements for the performance of certain piping and vessel welds due to exam limitations. Table 1 herein identifies those inservice inspection nondestructive examinations contained within the Hope Creek ISI Program Long Term Plan for the Second Ten-Year Interval whose NDE exams were found to be inaccessible, physically limited or partially obstructed and therefore not capable of fully meeting code coverage requirements for examination extent. Attachment 1 provides additional descriptive details (sketches, illustrations, and/or drawings) for these components.

Subject components contained herein have received inservice inspection NDE examinations to the "extent practical" within the limitations of design, geometry and materials of construction of the components as allowed by Code. These components have also undergone necessary volumetric examination by radiography and/or surface examinations during fabrication, in accordance with approved construction/fabrication code requirements providing adequate assurance for the structural integrity of the components prior to plant operation. In addition, ASME Class 1 and Class 2 components, identified in Table 1, have been subjected to a visual leakage examination either after a completion of each refueling outage (Class 1 components) or during each inspection period (Class 2 component). This provides additional assurance that the structural integrity of the subject components was maintained.

PSEG has implemented Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," of the ASME Code, Section XI, 1995 Edition with the 1996 Addenda in accordance with the November 22, 1999 revision of 10CFR50.55a. This provided new nondestructive examination requirements for reactor pressure vessel and Class 1 and 2 piping system welds. This resulted in revised coverage calculation methodologies that further reduced the credited examination coverage of those applicable components.

A. Exam Category B-A Pressure Retaining Welds in Reactor Vessels

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

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Relief was previously granted in Hope Creek relief request RR-B1, Part A (TAC NO. MA2026) SER dated February 3, 2000 for the reactor vessel longitudinal weld seams examination coverage of at least 78%. This coverage was based on performing the examination from outside the reactor vessel as was the case for the first interval. The examination for the second interval was performed from inside the reactor vessel and less coverage was attained.

Impracticality Of Compliance: Code required coverage is impractical for the identified subject components due to the head flange configuration preventing ultrasonic examination from the flange side of the head flange weld, and proximity of core spray internal piping and feedwater spargers to the reactor vessel longitudinal weld seams limiting access to the weld seams.

Burden Caused By Compliance: The reactor vessel longitudinal weld seams were examined from inside the reactor vessel. Additional coverage could have been obtained if the inspection was performed from outside the reactor vessel but this would cause additional radiation dose to obtain access to the weld and to examine the weld.

To obtain full coverage of the flange, the Reactor Pressure Vessel (RPV) would require design modifications. This would impose a significant burden to PSEG.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject welds. Examinations were performed to the maximum extent practical with no reportable indications.

Subject components have been subjected to a visual leakage examination after completion of each refueling outage. The head flange was also fully examined by MT with no reportable indications. These exams provide additional assurance that the structural integrity of the subject components was maintained.

B. Exam Category B-D Full Penetration Welds of Nozzles in Vessels – Inspection Program B

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

Impracticality Of Compliance: Code required coverage is impractical for the subject components due to nozzle configuration and therefore portions of the Code required examination volume can not be completely examined with ultrasonic techniques. The curvature of the blend radius of nozzle forgings prevents ultrasonic scanning of the weld from the nozzle side.

Burden Caused By Compliance: Altering the reactor vessel or nozzle configuration would require design modifications that would impose a significant burden to PSEG.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject welds. Examinations were performed to the maximum extent practical with no reportable indications.

Subject components have been subjected to a visual leakage examination after completion of each refueling outage. This provides additional assurance that the structural integrity of the subject components was maintained.

C. Exam Category B-G-1 Pressure Retaining Bolting Greater Than 2 Inches in Diameter

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

Impracticality Of Compliance: Code required coverage is impractical for the identified subject component due to head flange configuration. The ultrasonic examination of the threads in the flange is performed on the exposed carbon steel reactor vessel flange around the stud holes. The flange has stainless steel cladding from the inside surface of the vessel to approximately 3/8 inch from the stud hole. The ultrasonic transducer does not have access to this small area of the exposed carbon steel flange between the stud hole and the cladding.

Burden Caused By Compliance: Altering the head flange design or bolting configuration would require design modification that would impose a significant burden on PSEG.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject component. Examinations were performed to the maximum extent practical with no reportable indications.

Subject component has been subjected to a visual leakage examination after completion of each refueling outage. This provides additional assurance that the structural integrity of the subject component was maintained.

D. Exam Category B-J Pressure Retaining Piping Welds

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

Impracticality Of Compliance: Code required coverage is impractical for the identified subject components due to reducing tee configuration, branch piping configuration, valve and flange configuration, weld crown contours, weld-o-let configuration, sock-o-let configuration, and a pipe support. These issues limit or prevent full examination of the subject weld.

Burden Caused By Compliance: Altering these components would require design modifications that would impose a burden on PSEG from a cost and radiation dose perspective.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject welds. Examinations were performed to the maximum extent practical with no reportable indications.

Subject components have been subjected to a visual leakage examination after completion of each refueling outage. Also all components, except for one that was limited by a pipe support, were also fully examined by PT with no reportable indications. This provides additional assurance that the structural integrity of the subject components was maintained.

E. Exam Category C-G Pressure Retaining Welds in Pumps and Valves

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

Relief was previously granted in Hope Creek relief request RR-C1, Part C (TAC NO. MA2026) SER dated February 3, 2000.

Impracticality Of Compliance: A major portion of the Core Spray Pump Casing Weld, CP 206-CSP-W2 is embedded in the concrete pump pedestal. Relief Request RR-C1, Part C, for the second inspection interval requested relief for 73% coverage for this weld. This coverage was based on the first interval data sheets reporting 73% coverage. Subsequent review of the first interval data sheets showed that the exam was 73% limited due to inaccessibility because of the pump pedestal. The second interval examination of this weld achieved 23.4% coverage due to the concrete pump pedestal obstruction.

Burden Caused By Compliance: Altering this component would require a design modification that would impose a burden on PSEG from a cost and radiation dose perspective.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject weld. Examinations were performed to the maximum extent practical with no reportable indications.

The subject component has been subjected to a visual leakage examination during each period of the interval. This provides additional assurance that the structural integrity of the subject component was maintained.

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F. Exam Category R-A Risk Informed Piping Examinations

Table 1 identifies the specific component information, description of the limitation, and a Figure for the configuration.

Impracticality Of Compliance: Code required coverage is impractical for the identified subject components due to weld-o-let configuration, pipe to flange configuration, valve taper configuration, and a weld crown condition. These issues limit the examination of the subject weld.

Burden Caused By Compliance: The required ASME Code coverage is impractical for the subject welds since the components would require design modifications that would impose a significant burden to PSEG.

Proposed Alternative And Basis For Use: No alternative provisions are practical for the subject welds. Examinations were performed to the maximum extent practical with no reportable indications.

Subject components have been subjected to a visual leakage examination after completion of each refueling outage. This provides additional assurance that the structural integrity of the subject components was maintained.

5. Duration of Proposed Alternative

The End of Interval Relief is requested for the Second Ten-Year Inspection Interval for Hope Creek Generating Station, which ended on December 12, 2007.

6. Precedents:

As part of the submission of the Hope Creek second 10-year interval ISI program plan and associated relief requests, limitations relief requests RR-B1 and RR-C1 were submitted. In the Safety Evaluation of that submission, relief was granted for relief requests RR-B1, parts A, B, C, D, and F, and RR-C1, parts A, B, and C, for the Hope Creek second 10-year interval (Reference 1).

7. References:

1) Safety Evaluation Of Relief Requests For Second 10-Year Interval For Inservice Inspection Program – Hope Creek Generating Station (TAC No. MA2026), February 3, 2000

2) Letter, LR-N04-0420, from Christina L. Perino (PSEG Nuclear LLC) to USNRC, Update ASME XI Code of Record, dated October 29, 2004

3) Hope Creek Generating Station – Implementation Of a Risk-Informed Inservice Inspection Program (TAC No. MC2221), December 8, 2004

Table 1
Hope Creek Generating Station
RR#: HC-I2-RR-A25
2nd ISI Interval Exam Limitations

Sum#	Component ID	Description	ASME Cat	ASME Item #	ASME Class	Limited NDE Exam	Code Coverage Achieved	Exam Outage	Figure	Required Examination Volume	Limitation Description
100055	RPV1-W12-1	LONGITUDINAL SEAM AT 110 DEG	B-A	B1.12	1	UT	71.40%	RF14	1	>90%	Examined from the inside surface. Examination limited due to proximity of core spray internal piping & feedwater spargers.
100060	RPV1-W12-2	LONGITUDINAL SEAM AT 230 DEG	B-A	B1.12	1	UT	70.00%	RF14	2	>78% RR-B1	Examined from the inside surface. Examination limited due to proximity of core spray internal piping & feedwater spargers. Required volume from approved relief request RR-B1
100065	RPV1-W12-3	LONGITUDINAL SEAM AT 350 DEG	B-A	B1.12	1	UT	71.50%	RF14	3	>78% RR-B1	Examined from the inside surface. Examination limited due to proximity of core spray internal piping & feedwater spargers. Required volume from approved relief request RR-B1
100145	RPV1-W20	HEAD TO FLANGE	B-A	B1.40	1	UT	70.23%	RF09 RF11 RF13	4	>90%	UT exams limited due to head flange configuration. No UT scan from flange side. Full coverage was attained during MT exam.
100200	RPV1-N2B	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 60 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100205	RPV1-N2C	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 90 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100235	RPV1-N2J	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 300 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100240	RPV1-N2K	NOZZLE TO SHELL WELD 12" RECIRC INLET AT 330 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100265	RPV1-N4A	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100270	RPV1-N4B	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100275	RPV1-N4C	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	71.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100280	RPV1-N4D	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100285	RPV1-N4E	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100290	RPV1-N4F	NOZZLE TO SHELL WELD	B-D	B3.90	1	UT	71.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100295	RPV1-N5A	NOZZLE TO SHELL WELD 10"CORE SPRAY INLET AT 120 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100300	RPV1-N5B	NOZZLE TO SHELL WELD 10"CORE SPRAY INLET AT 240 DEG	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100320	RPV1-N8A	NOZZLE TO SHELL JET INSTRUMENTATION	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100325	RPV1-N8B	NOZZLE TO SHELL 4" JET INSTRUMENTATION	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100330	RPV1-N9A	NOZZLE TO SHELL WELD 4" CRD HYDRAULIC RETURN	B-D	B3.90	1	UT	77.45%	RF09	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100400	RPV1-N17A	NOZZLE TO SHELL AT 45 DEG	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100401	RPV1-N17B	NOZZLE TO SHELL AT 135 DEG	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100403	RPV1-N17D	NOZZLE TO SHELL AT 315 DEG	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100404	RPV1-N6A	NOZZLE TO HEAD HEAD SPRAY NOZZLE	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100405	RPV1-N6B	NOZZLE TO HEAD SPARE HEAD NOZZLE	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.

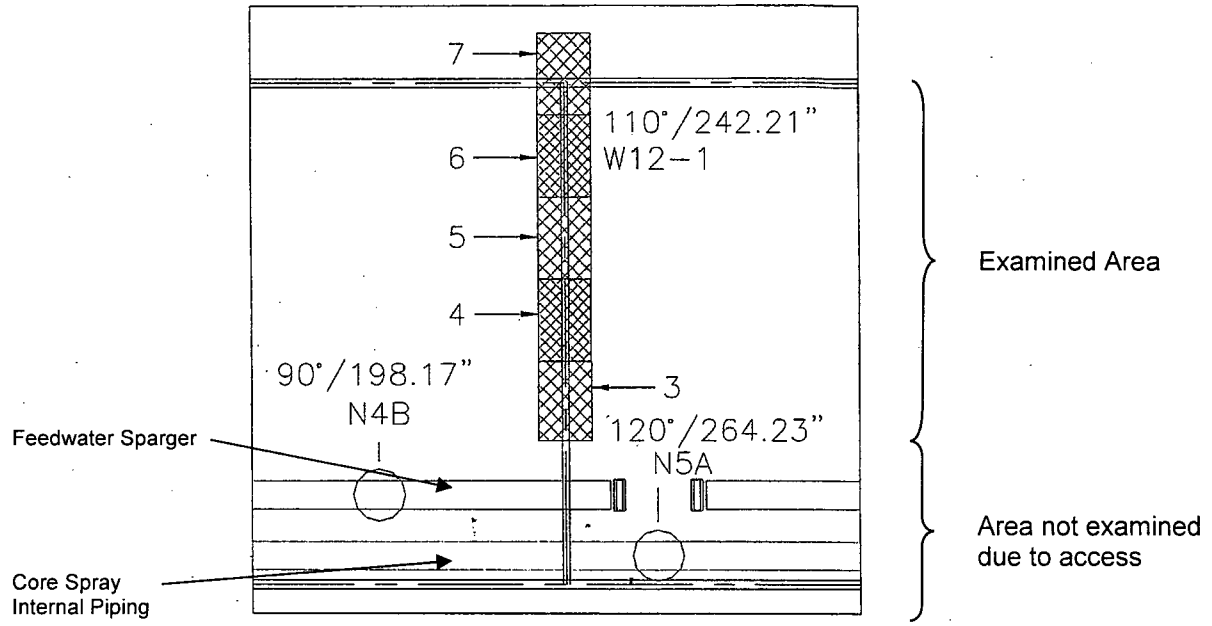
Table 1
Hope Creek Generating Station
RR#: HC-I2-RR-A25
2nd ISI Interval Exam Limitations

Sum#	Component ID	Description	ASME Cat	ASME Item #	ASME Class	Limited NDE Exam	Code Coverage Achieved	Exam Outage	Figure	Required Examination Volume	Limitation Description
100406	RPV1-N7	NOZZLE TO HEAD VENT NOZZLE	B-D	B3.90	1	UT	75.00%	RF12	5	>90%	UT limited due to nozzle configuration. Examined from the shell side only due to blend radii limiting nozzle side scan.
100880	RPV1-THDF	THREADS IN FLANGE	B-G-1	B6.40	1	UT	75.00%	RF14	6	>90%	UT limited due to flange configuration.
105890	1-BB-28VCA-013-6-R2	PIPE TO REDUCING TEE	B-J	B9.11	1	UT	50.00%	RF10	7	>90%	UT limited due to reducing tee configuration. Single sided access. 100% PT coverage.
108105	1-BC-6DBA-003-21	VALVE TO FLANGE	B-J	B9.11	1	UT	33.33%	RF10	8	>90%	UT limited due to configuration of valve and flange. 100% PT coverage.
109170	1-BC-12CCA-116-5	PIPE TO REDUCING TEE	B-J	B9.11	1	UT	80.20%	RF09	9	>90%	UT limited due to tee configuration and weld contour. 100% PT coverage.
110200	1-BG-4CCA-012-1	WELDOLET TO PIPE	B-J	B9.11	1	UT	50.00%	RF10	10	>90%	UT limited due to weld-o-let configuration. No exam upstream. Single sided access. 100% PT coverage.
110230	1-BG-4CCA-011-1	WELDOLET TO PIPE	B-J	B9.11	1	UT	50.00%	RF10	11	>90%	UT limited due to weld-o-let configuration. No exam upstream. Single sided access. 100% PT coverage.
110432	1-FC-4DBA-003-7A	PIPE TO FLOW ELEMENT	B-J	B9.11	1	UT	67.90%	RF09	12	>90%	UT limited due to sock-o-let configuration and weld contour. 100% PT coverage.
110433	1-FC-4DBA-003-7B	FLOW ELEMENT TO PIPE	B-J	B9.11	1	UT	76.20%	RF09	12	>90%	UT limited due to weld crown configuration. 100% PT coverage.
110475	1-FC-4DBA-003-16	ELBOW TO PIPE	B-J	B9.11	1	MT UT	51.846% 26.05%	RF10	13	>90%	MT exam and UT limited due to pipe support.
106080	1-BB-22VCA-013-3BC1	12-IN BRANCH CONNECTION	B-J	B9.31	1	UT	75.00%	RF10	14	>90%	UT limited due branch piping configuration resulting in single sided access. 100% PT coverage.
106125	1-BB-22VCA-013-3BC2	12-IN BRANCH CONNECTION	B-J	B9.31	1	UT	75.00%	RF10	15	>90%	UT limited due branch piping configuration resulting in single sided access. 100% PT coverage.
106910	1-BB-22VCA-014-1BC1	12-IN BRANCH CONNECTION	B-J	B9.31	1	UT	75.00%	RF10	16	>90%	UT limited due branch piping configuration resulting in single sided access. 100% PT coverage.
106955	1-BB-22VCA-014-1BC2	12-IN BRANCH CONNECTION	B-J	B9.31	1	UT	75.00%	RF10	17	>90%	UT limited due branch piping configuration resulting in single sided access. 100% PT coverage.
107025	1-BB-22VCA-014-3BC2	12-IN BRANCH CONNECTION	B-J	B9.31	1	UT	75.00%	RF10	18	>90%	UT limited due branch piping configuration resulting in single sided access. 100% PT coverage.
250130	CP 206-CSP-W2	CORE SPRAY PUMP - PUMP CASING WELD	C-G	C6.10	2	PT	23.40%	RF09	19	>73.0% RR-C1	PT limited due to a concrete pump pedestal obstruction. Required volume from approved relief request RR-C1
105585	1-BB-4VCA-011-1-R1	BRANCH CONNECTION TO PIPE	R-A	R1.20	1	UT	50.00%	3/30/05	20	>90%	UT limited due to weld-o-let configuration. Pre-service exam followed a repair during a forced outage. Supplemented by construction RT.
105790	1-BB-4VCA-012-1-R1	BRANCH CONNECTION TO PIPE	R-A	R1.20	1	UT	50.00%	4/3/05	21	>90%	UT limited due to weld-o-let configuration. Pre-service exam followed a repair during a forced outage. Supplemented by construction RT.
109810	1-BG-6DBA-001-29	PIPE TO VALVE	R-A	R1.20	1	UT	58.07%	RF12	22	>90%	UT limited due to valve taper configuartion and weld crown.

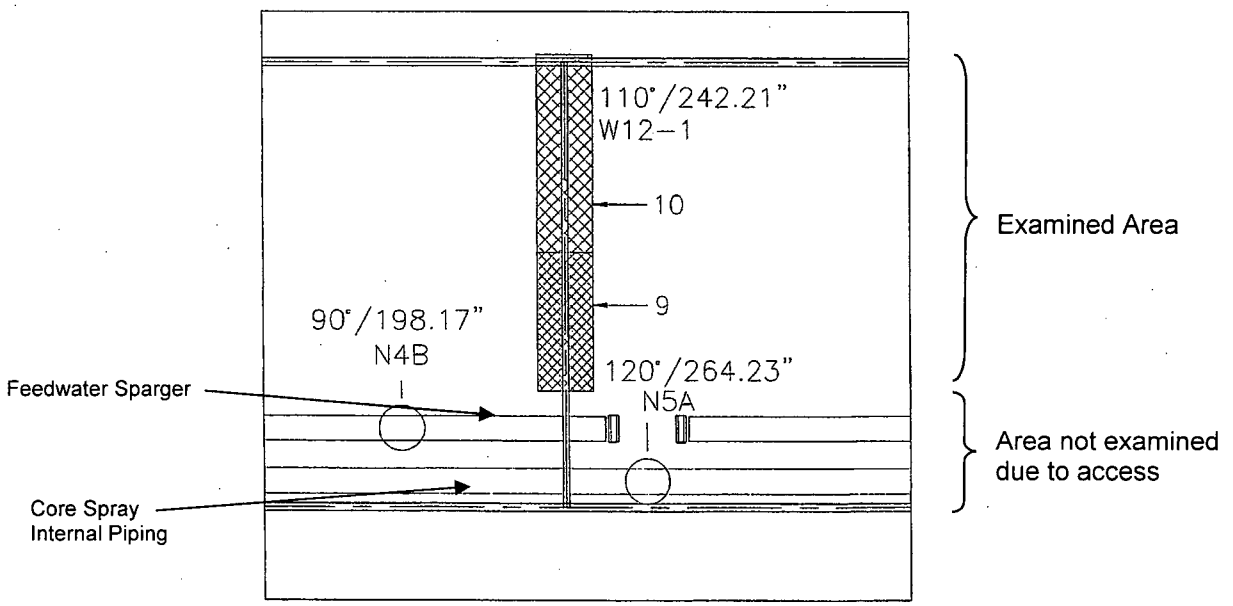
Request Number HC-I2-RR-A25
Figure 1

IHI SOUTHWEST TECHNOLOGIES
RPV EXAMINATION - OCTOBER 2007
HOPE CREEK GENERATING STATION – RF14

Examination Location & Coverage Map for Weld No. RPV1-W12-1



Transverse Exams

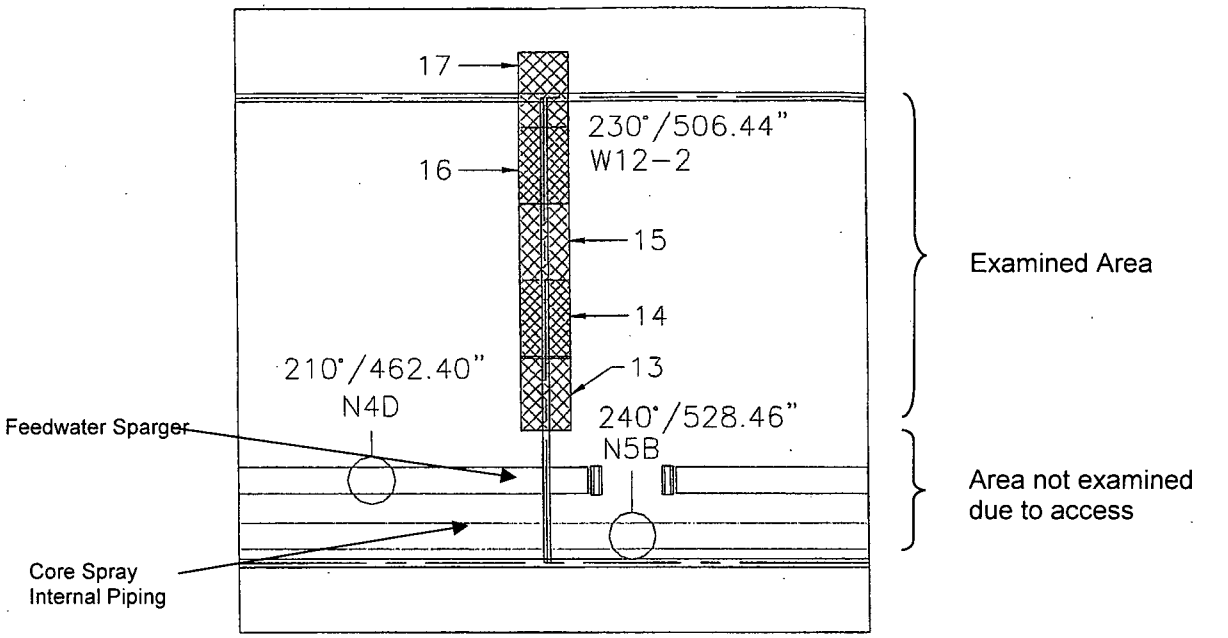


Parallel Exams

Request Number HC-I2-RR-A25
Figure 2

IHI SOUTHWEST TECHNOLOGIES
RPV EXAMINATION - OCTOBER 2007
HOPE CREEK GENERATING STATION – RF14

Examination Location & Coverage Map for Weld No. RPV1-W12-2



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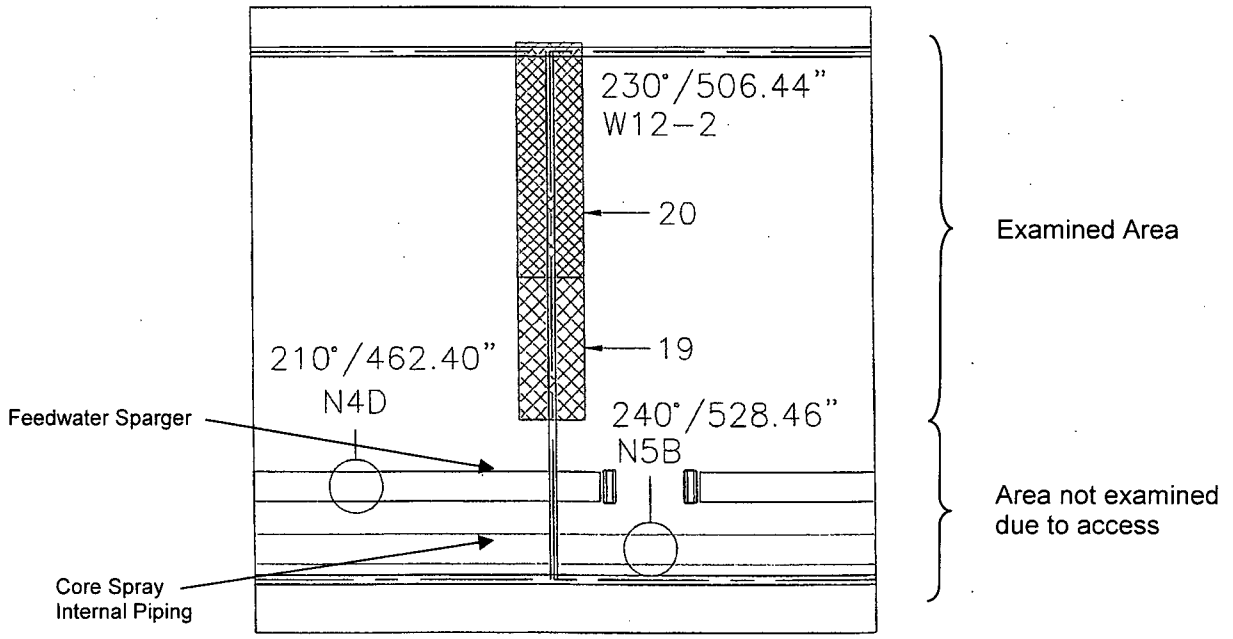
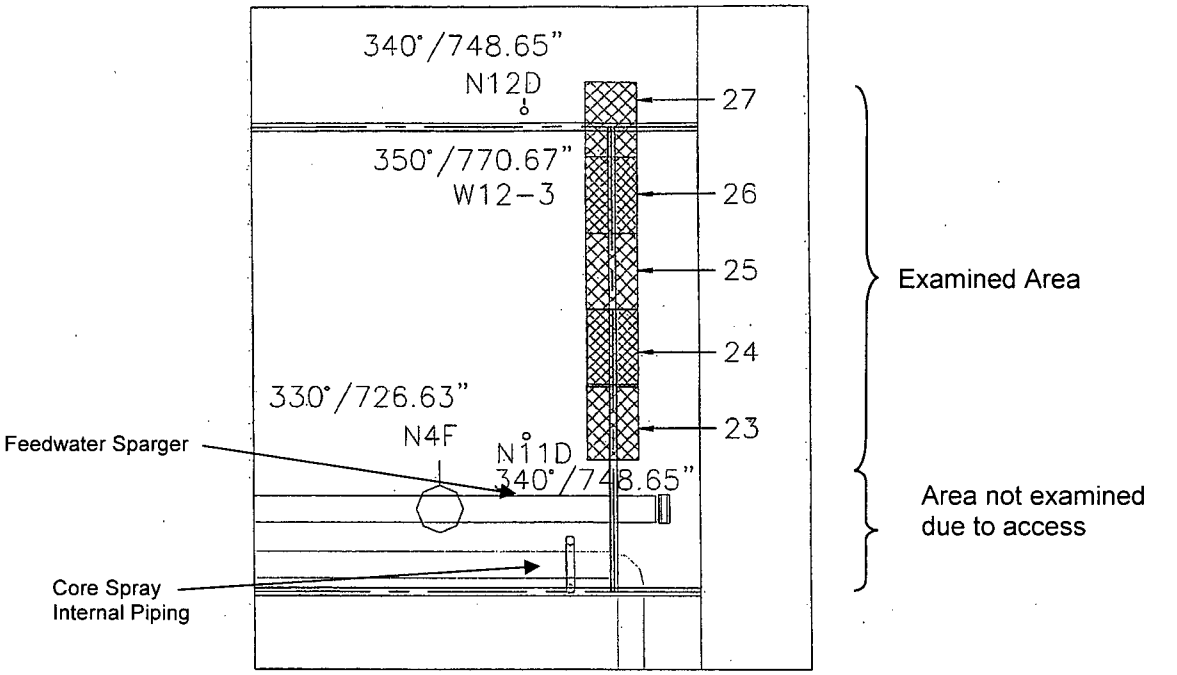


Parallel Exams

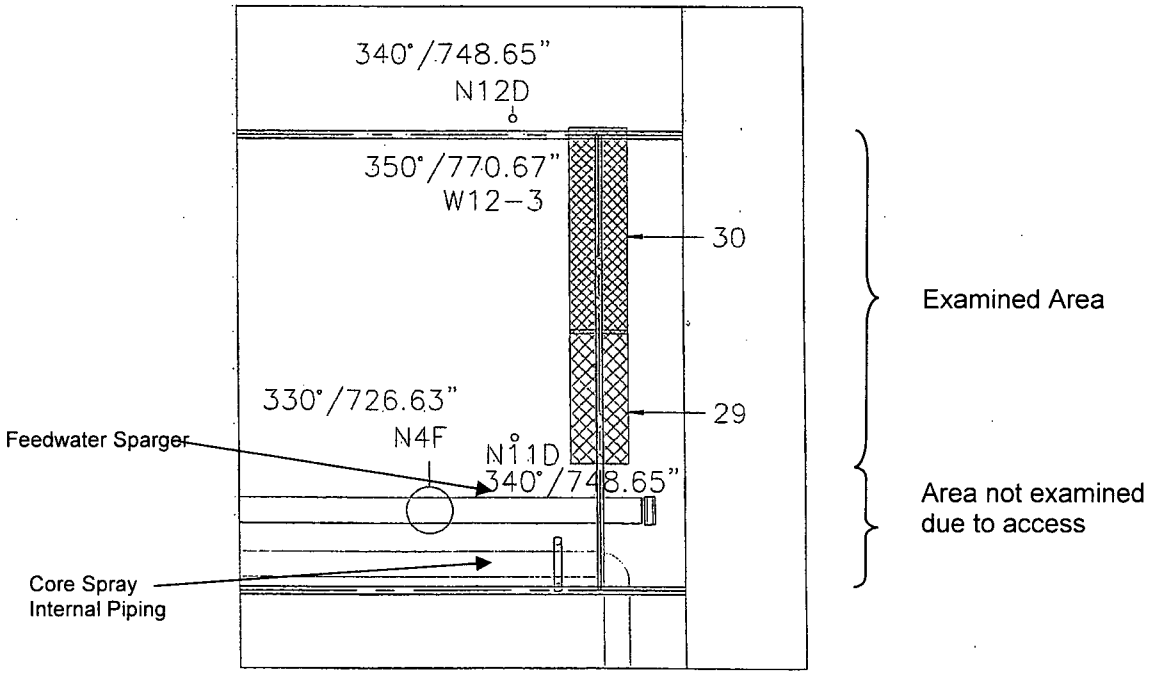
Request Number HC-I2-RR-A25
Figure 3

IHI SOUTHWEST TECHNOLOGIES
RPV EXAMINATION - OCTOBER 2007
HOPE CREEK GENERATING STATION – RF14

Examination Location & Coverage Map for Weld No. RPV1-W12-3



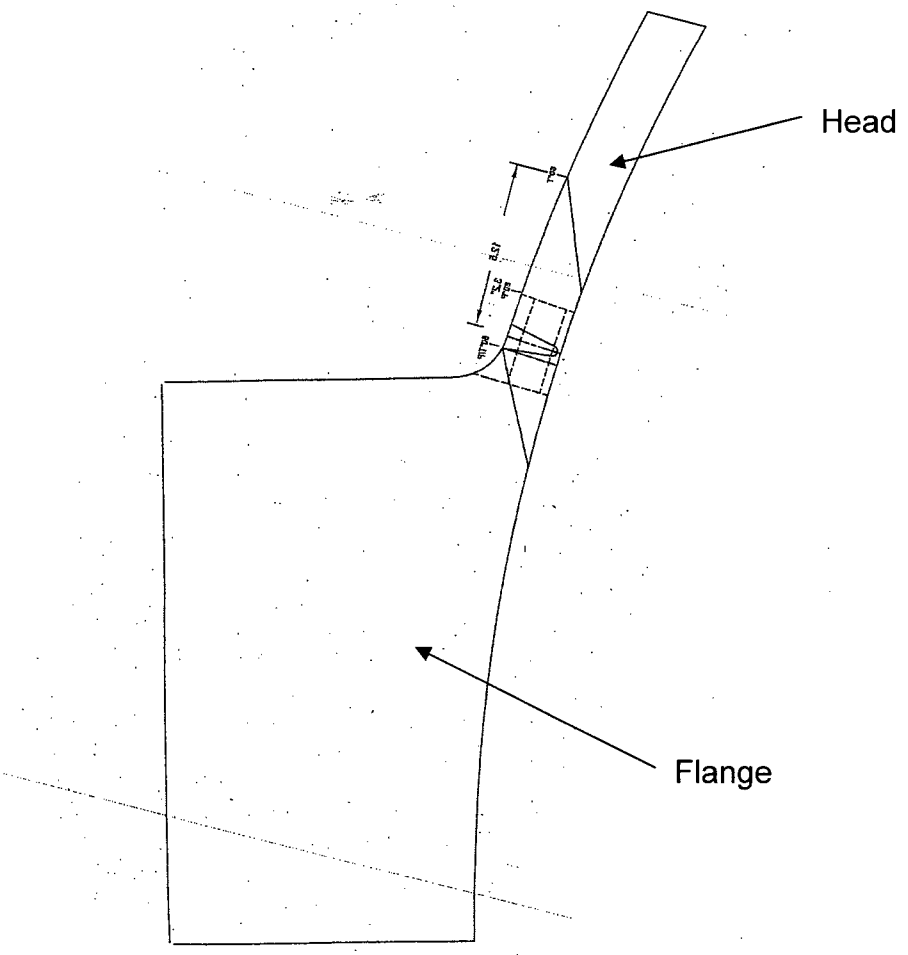
Transverse Exams



Parallel Exams

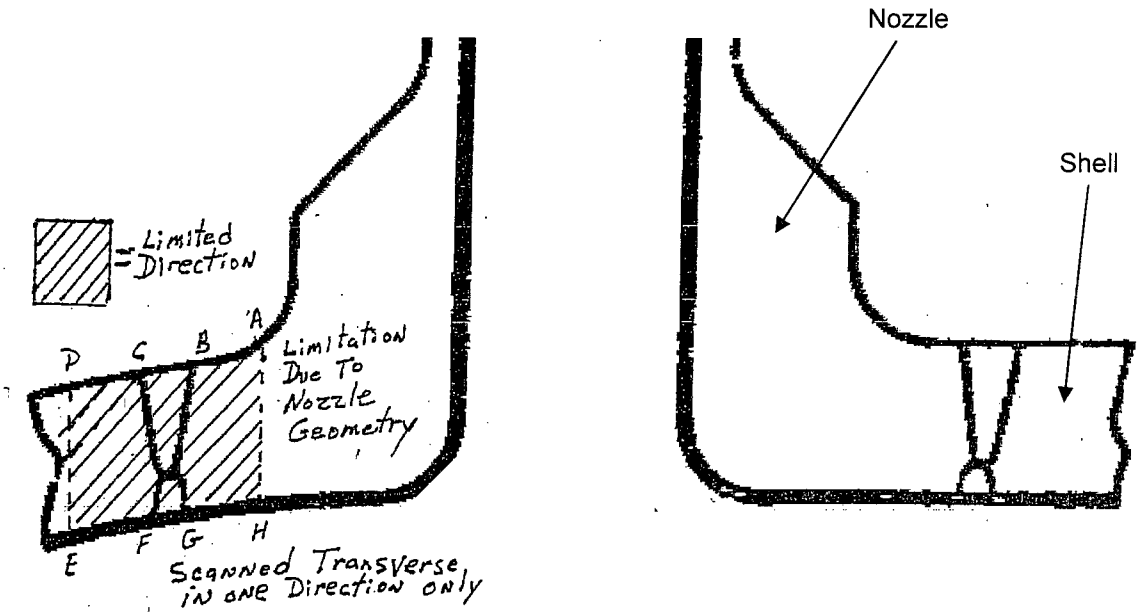
Request Number HC-I2-RR-A25
Figure 4

Limitation Due to Reactor Vessel Closure Head to Flange Configuration



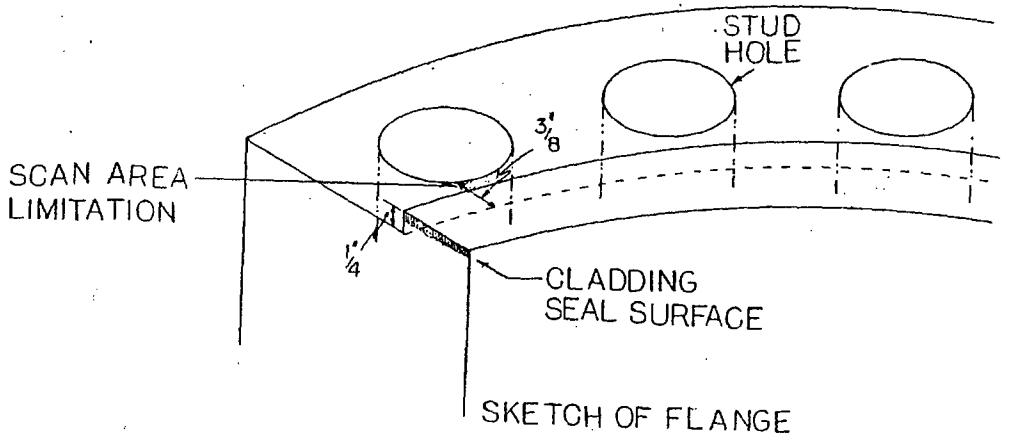
Request Number HC-I2-RR-A25
Figure 5

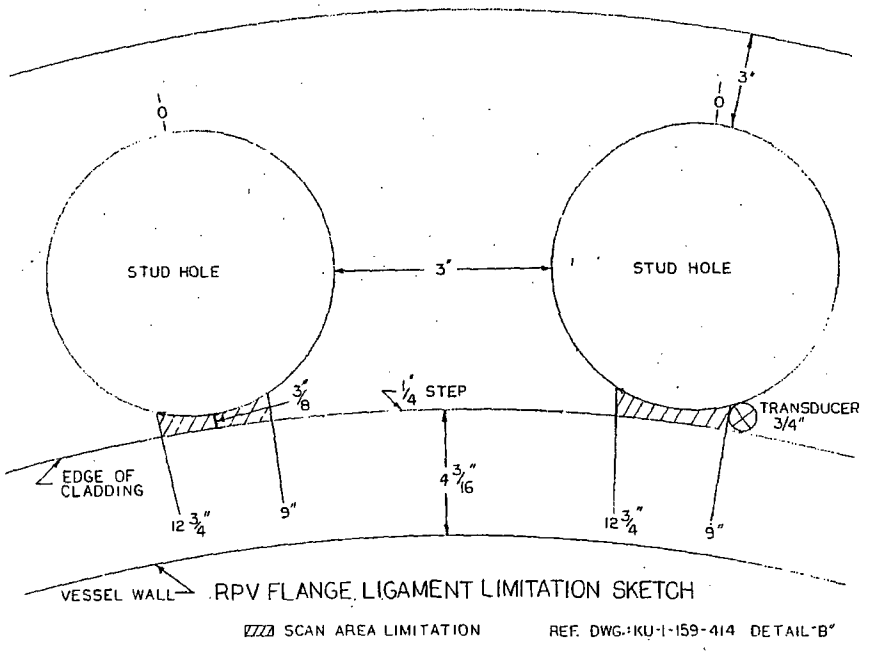
Limitation Due to Nozzle Configuration (Typical)



Request Number HC-I2-RR-A25
Figure 6

Threads in RPV Flange Limitation Due to Cladding





Request Number HC-I2-RR-A25
Figure 7

Limitation Due to Reducing Tee Configuration

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 10/13/01	Summary No.: 105890
Site: Hope Creek , RFO 10	Examination Method: UT
System: Nuclear Boiler and Recirculation	Identification: 1-BB-28VCA-013-6-R2

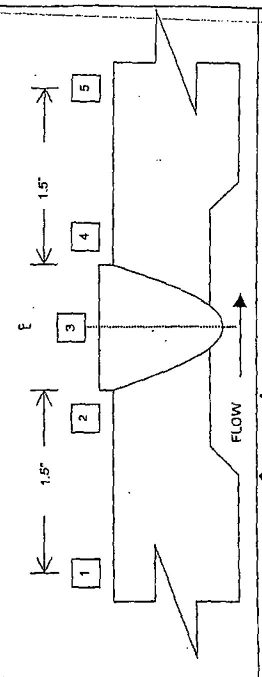
POSITION	0	90	180	270
1	1.38"	N/A	N/A	N/A
2	1.38"	N/A	N/A	N/A
3	1.34"	N/A	N/A	N/A
4	1.38"	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

CROWN HEIGHT: 0.02"

CROWN WIDTH: 1.30"

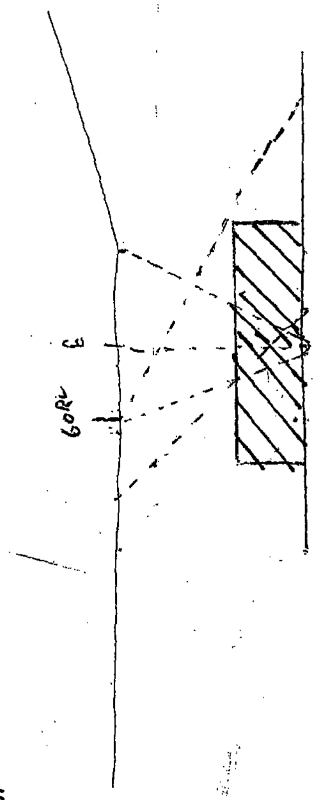
NOM DIAMETER: 28.0"

WELD LENGTH: 92.0"



Limited EXAM Due to Reducing tee Configuration
50% Code Required Volume

▨ = Limitation AREA



FACTORY MUTUAL INSURANCE COMPANY
[signature] 10/26/01

Prepared By	Date	Reviewed By	Date	Utility Review By	Date
[signature]	10.14.01	Bob Kelle[signature]	10/19/01	[signature]	10-23-01

Request Number HC-12-RR-A25
Figure 8

Limitation Due to Valve and Flange Configuration

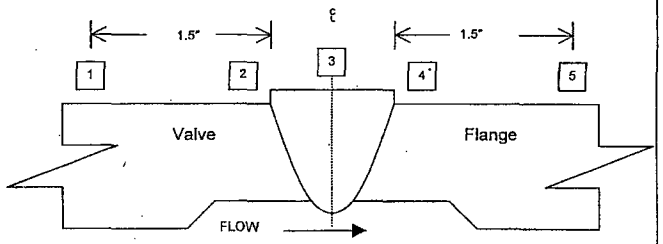
FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 10/18/01	Summary No.: 108105
Site: Hope Creek , RFO 10	**Examination Method:** UT
System: Residual Heat Removal System Piping	**Identification:** 1-BC-6DBA-003-21

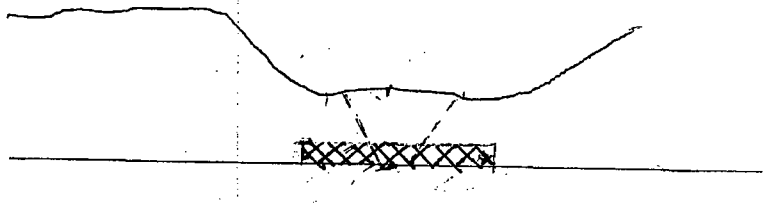
POSITION	0	90	180	270
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	0.53"	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

CROWN HEIGHT: 0.10"
CROWN WIDTH: 1.00"
NOM DIAMETER: 6.00"
WELD LENGTH: 21.50"



Scanned Clockwise AND Counter clockwise on weld only 33% Coverage of Total Weld Volume attained

= No Examination UP or DOWN STREAM Due to Valve Body and Flange Geometry

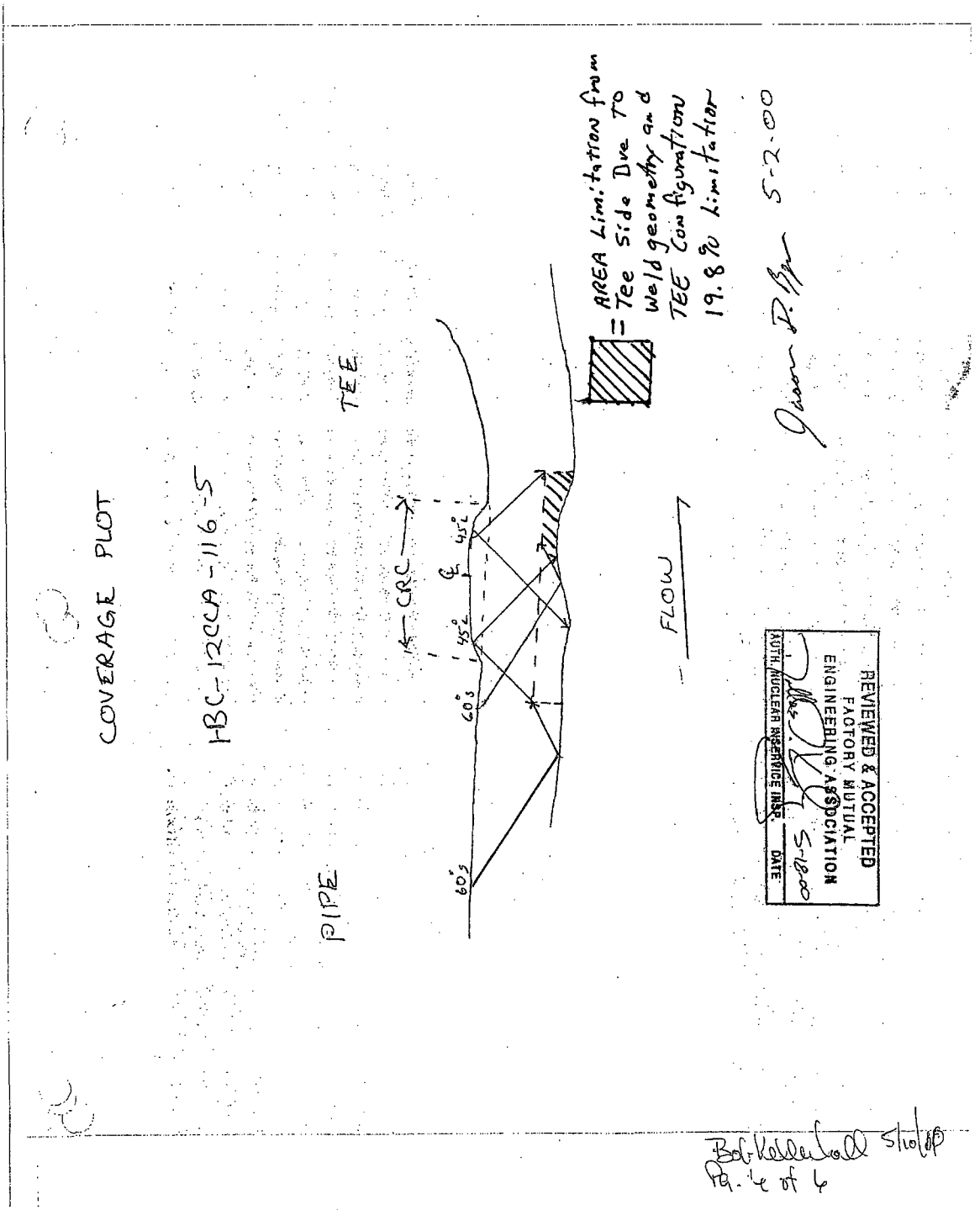


Prepared By	Date	Reviewed By	Date	Utility Review By	Date
[illegible]	10-19-01	BLC 10/22/01	10-19-01	[illegible]	10-24-01

5/5

Request Number HC-I2-RR-A25
Figure 9

Limitation Due to Tee Configuration and Weld Contour



Request Number HC-I2-RR-A25
Figure 10

Limitation Due to Weld-O-Let Configuration

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 10/17/01	Summary No.: 110200
Site: Hope Creek, RFO 10	Examination Method: UT
System: Reactor Water Cleanup System Piping	Identification: 1-BG-4CCA-012-1

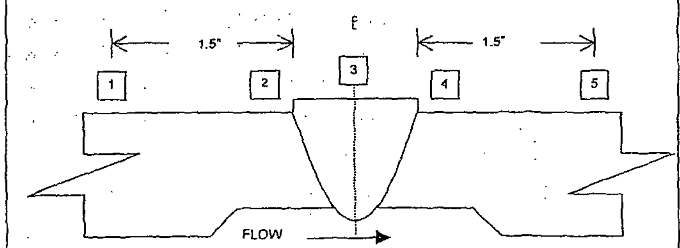
POSITION	0	90	180	270
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	0.24"	N/A	N/A	N/A
4	0.23"	N/A	N/A	N/A
5	0.23"	N/A	N/A	N/A

CROWN HEIGHT: Flush

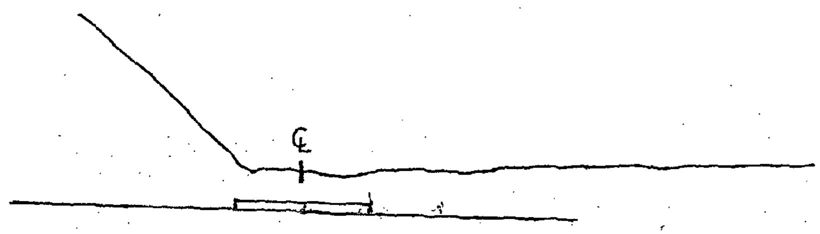
CROWN WIDTH: 0.50"

NOM DIAMETER: 4.0"

WELD LENGTH: 14.25"



No Examination UpSTREAM WeldOLET Configuration



FACTORY MUTUAL INSURANCE COMPANY
[signature] 10/26/01

Prepared By	Date	Reviewed By	Date	Utility Review By	Date
[signature]	10·18·01	[signature]	10/24/01	[signature]	10-26-01 6/8

Request Number HC-I2-RR-A25
Figure 11

Limitation Due to Weld-O-Let Configuration

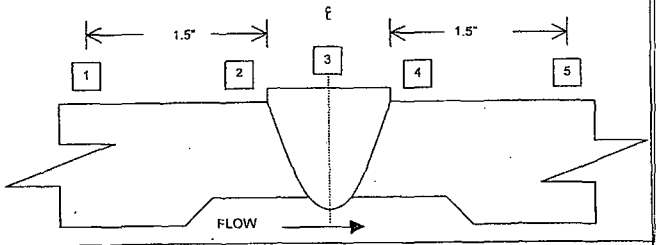
FRAMATOME ANP

PROFILE AND THICKNESS

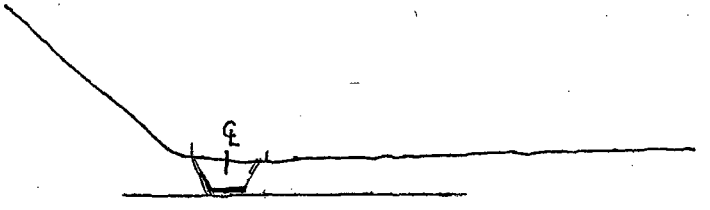
Exam Date: 10/17/01	Summary No.: 110230
Site: Hope Creek , RFO 10	Examination Method: UT
System: Reactor Water Cleanup System Piping	Identification: 1-BG-4CCA-011-1

POSITION	0	90	180	270
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	0.23"	N/A	N/A	N/A
4	0.23"	N/A	N/A	N/A
5	0.24"	N/A	N/A	N/A

CROWN HEIGHT: 0.03"
CROWN WIDTH: 0.55"
NOM DIAMETER: 4.0"
WELD LENGTH: 14.3"



No SCANN UPSTREAM DUE TO WELDOLET
50% Coverage of Code REQUIRED EXAMINATION



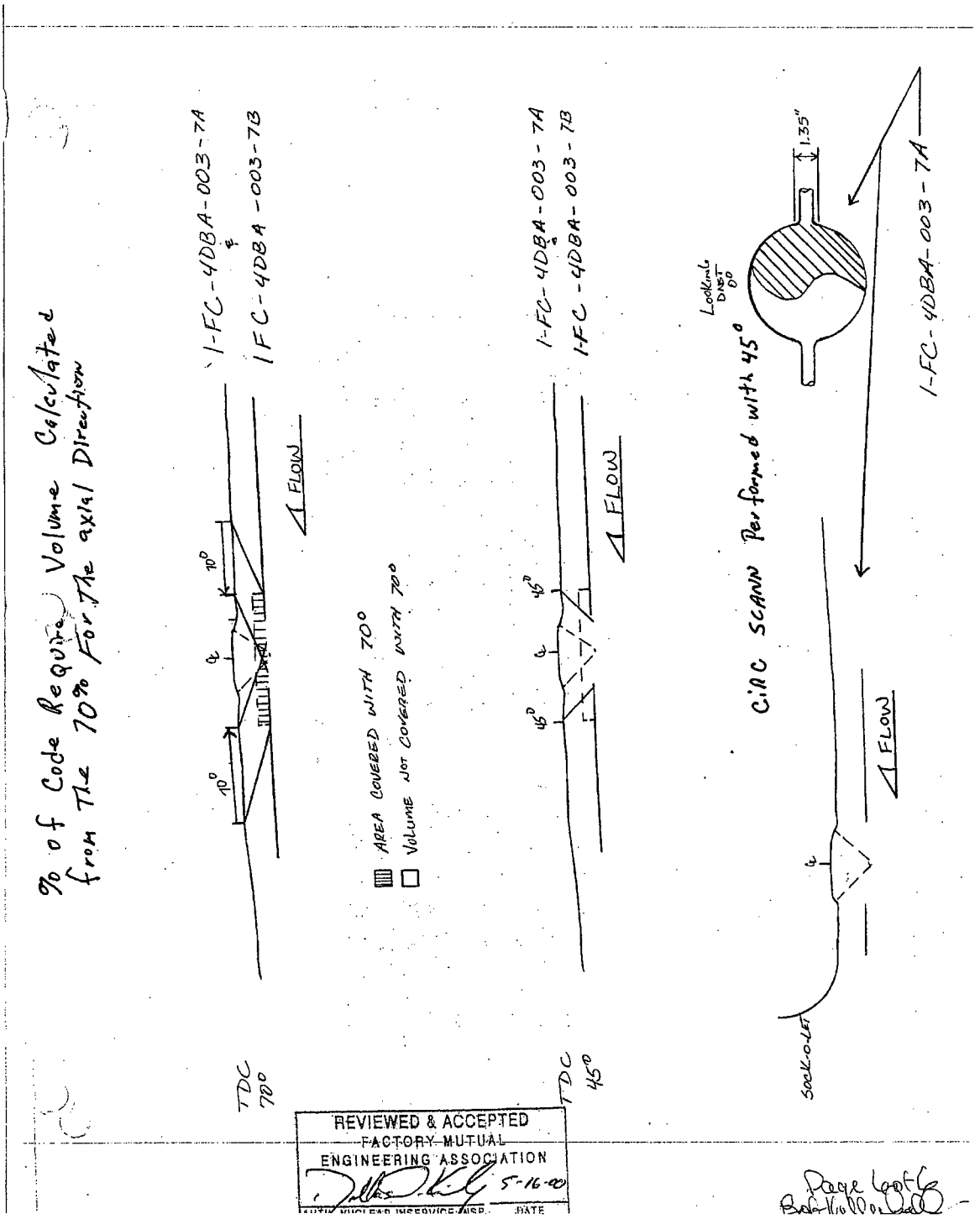
FACTORY MUTUAL INSURANCE COMPANY
10/26/01

Prepared By	Date	Reviewed By	Date	Utility Review By	Date
	10-18-01	Bob Kelly	10/24/01		10-26-01

6/78

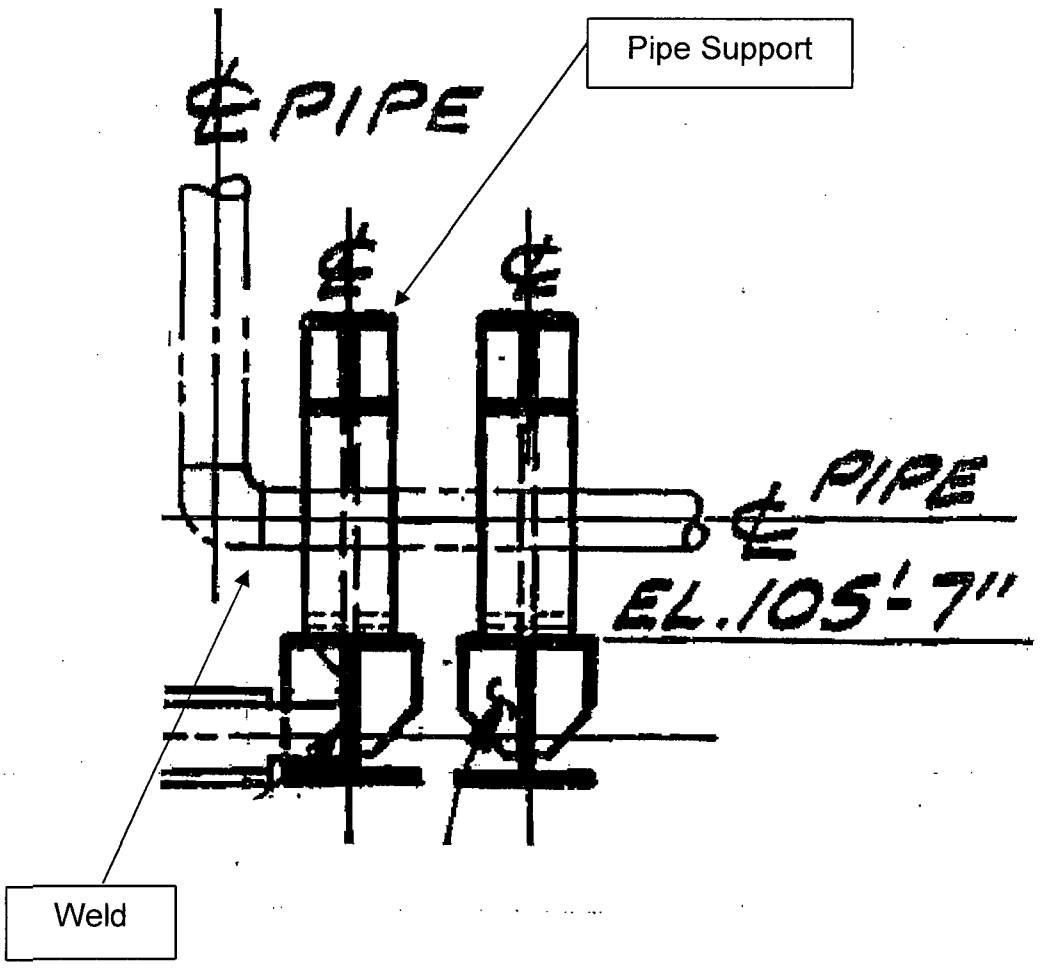
Request Number HC-I2-RR-A25
Figure 12

Limitation Due to Sock-O-Let Configuration and Weld Contour



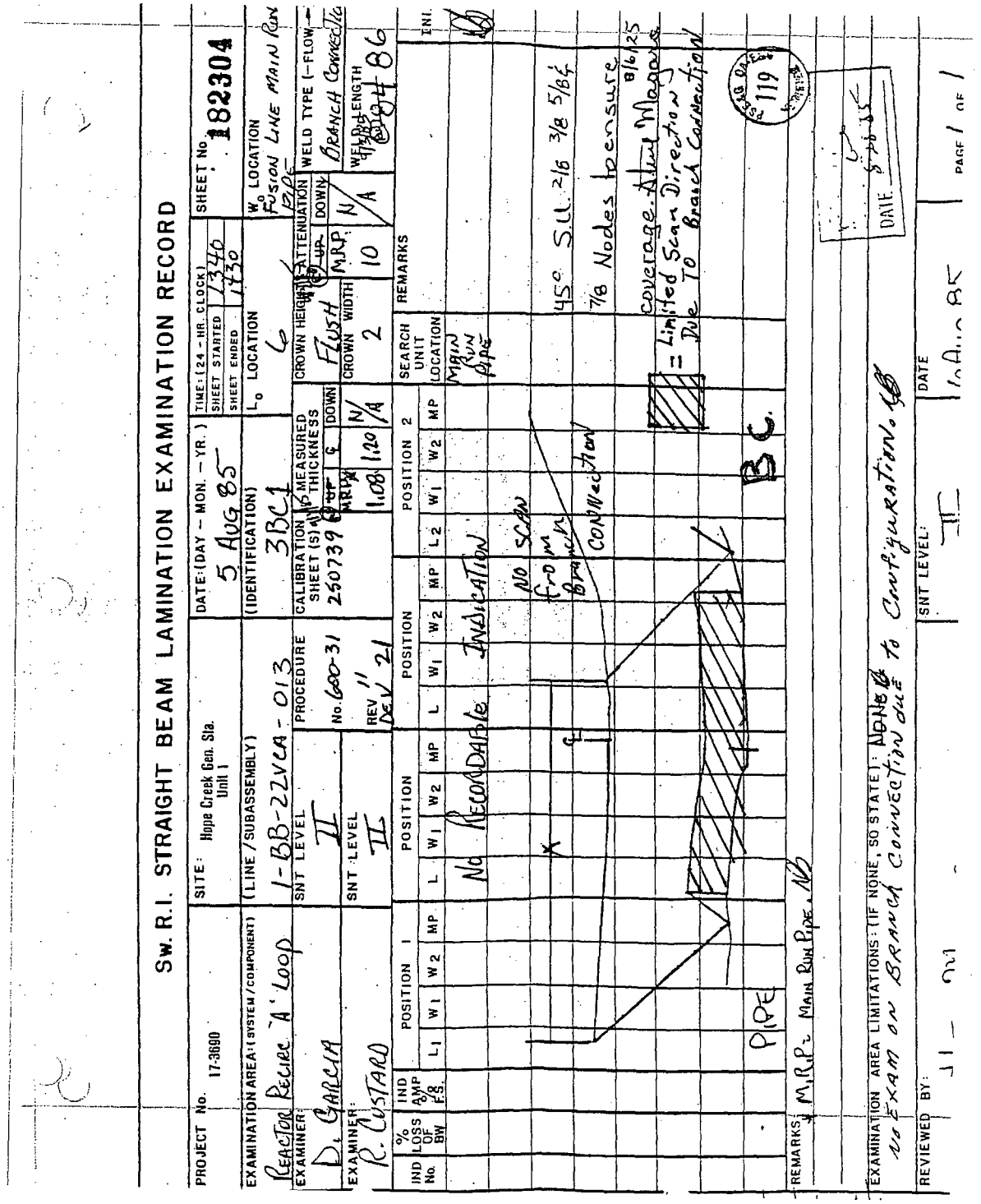
Request Number HC-I2-RR-A25
Figure 13

Limitation Due to Pipe Support



Request Number HC-I2-RR-A25
Figure 14

Limitation Due to Branch Piping Configuration



Request Number HC-I2-RR-A25
Figure 15

Limitation Due to Branch Piping Configuration

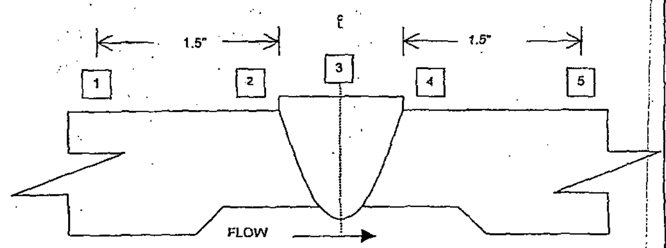
FRAMATOME ANP

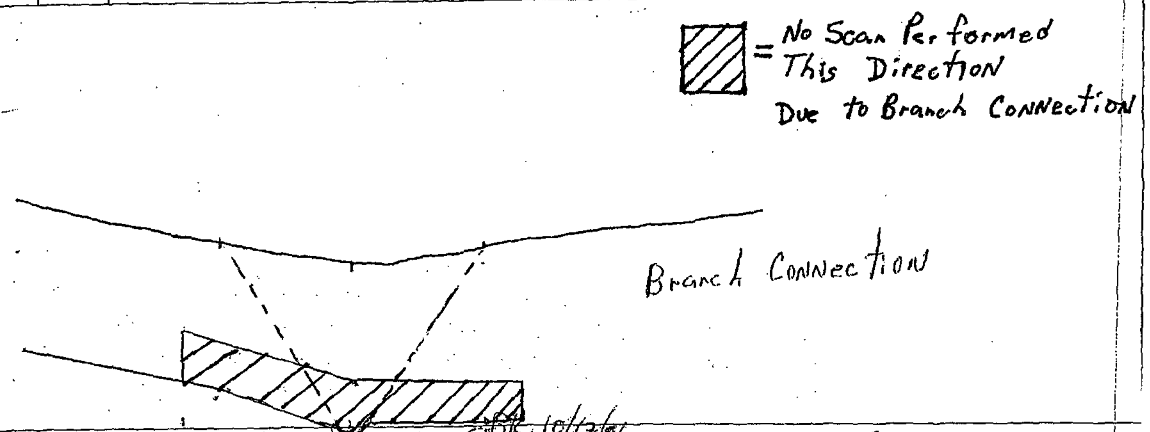
PROFILE AND THICKNESS

Exam Date: 10/13/01	Summary No.: 106125
Site: Hope Creek , RFO 10	Examination Method: UT
System: Nuclear Boiler and Recirculation	Identification: 1-BB-22VCA-013-3BC2

POSITION	0	90	180	270
1	1.10"	1.20"	1.10"	1.10"
2	1.10"	1.20"	1.10"	1.10"
3	1.25"	1.30"	1.20"	1.30"
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

CROWN HEIGHT: Flush
CROWN WIDTH: 1.90"
NOM DIAMETER: 22.0"
WELD LENGTH: 80.0"





Prepared By 10-13-01 Date

Reviewed By 10-13-01 Date

Utility Review By 10-24-01 Date

Request Number HC-I2-RR-A25
Figure 16

Limitation Due to Branch Piping Configuration

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 10/14/01

Summary No.: 106910

Site: Hope Creek , RFO 10

Examination Method: UT

System: Nuclear Boiler and Recirculation

Identification: 1-BB-22VCA-014-1BC1

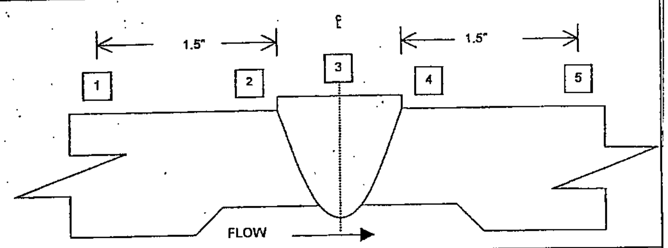
POSITION	0	90	180	270
1	1.10"	N/A	N/A	N/A
2	1.10"	N/A	N/A	N/A
3	1.20"	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

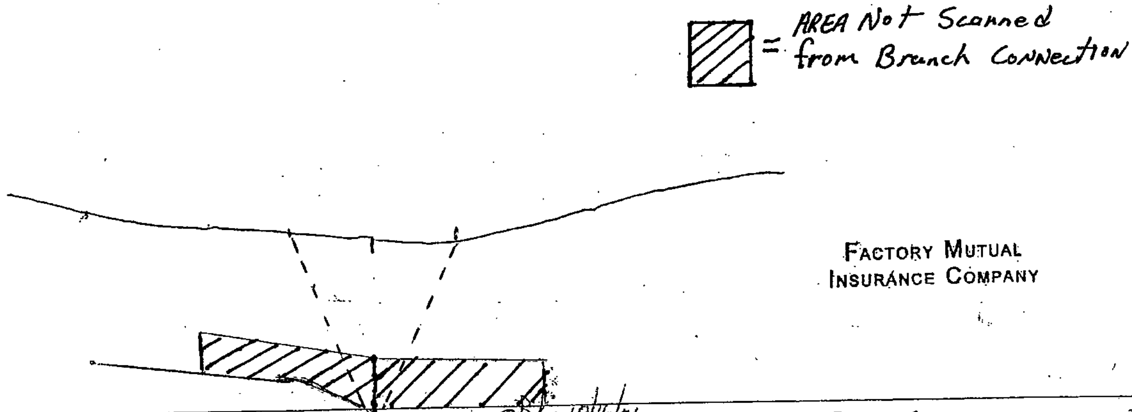
CROWN HEIGHT: Flush

CROWN WIDTH: 1.25"

NOM DIAMETER: 22.0"

WELD LENGTH: 80.0"





FACTORY MUTUAL
INSURANCE COMPANY

Prepared By	Date	Reviewed By	Date	Utility Review By	Date
[signature]	10-14-01	[signature]	10-14-01 BC 10/16/01	[signature]	10-19-01

Request Number HC-I2-RR-A25
Figure 17

Limitation Due to Branch Piping Configuration

PROFILE AND THICKNESS

FRAMATOME ANP

Exam Date: 10/14/01

Summary No.: 106955

Examination Method: UT

ite: Hope Creek , RFO 10

Identification: 1-BB-22VCA-014-1BC2

ystem: Nuclear Boiler and Recirculation

OSITION	0	90	180	270
1	1.10"	N/A	N/A	N/A
2	1.15"	N/A	N/A	N/A
3	1.15"	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

CROWN HEIGHT: Flush

CROWN WIDTH: 1.25"

NOM DIAMETER: 22.0"

WELD LENGTH: 80.0"

1.5" 1.5" 1.5"

1 2 3 4 5

FLOW

= Limited Exam from Branch Side of weld Axial Scan from UP STREAM on Pipe Side only

Branch Connection

FACTORY MUTUAL INSURANCE COMPANY

Prepared By Date

Reviewed By Date

Utility Review By Date

Request Number HC-I2-RR-A25
Figure 18

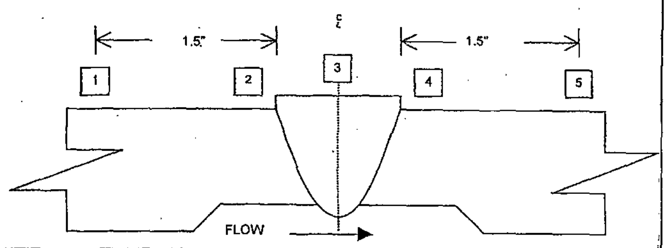
Limitation Due to Branch Piping Configuration

FRAMATOME ANP

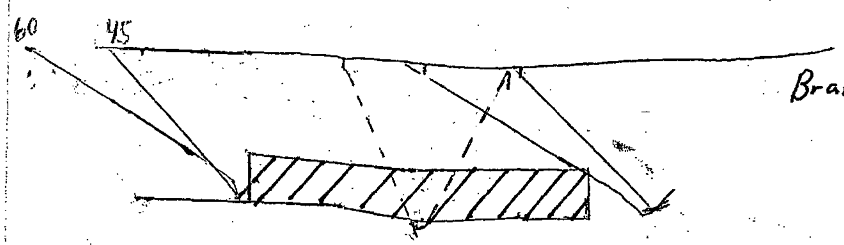
PROFILE AND THICKNESS

Exam Date: 10/13/01	**Summary No.: 107025**
Site: Hope Creek , RFO 10	**Examination Method: UT**
System: Nuclear Boiler and Recirculation	**Identification: 1-BB-22VCA-014-3BC2**

POSITION	0	90	180	270	
1	1.10"	N/A	N/A	N/A	CROWN HEIGHT: Flush
2	1.10"	N/A	N/A	N/A	CROWN WIDTH: 1.25"
3	1.15"	N/A	N/A	N/A	NOM DIAMETER: 22.0"
4	N/A	N/A	N/A	N/A	WELD LENGTH: 80.0"
5	N/A	N/A	N/A	N/A	



= Limited AREA Not Inspected from Branch Connection



Branch Connection

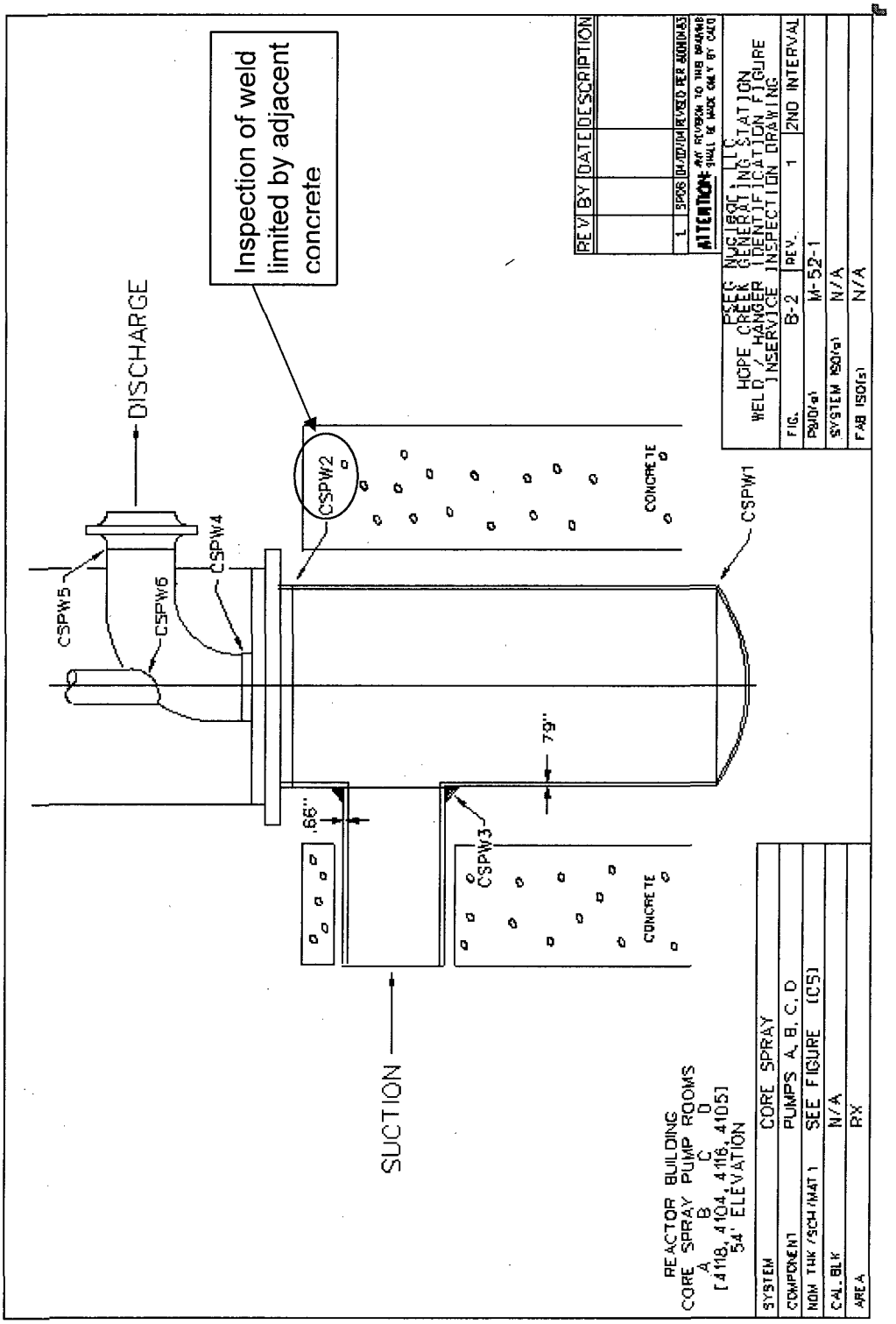
FACTORY MUTUAL INSURANCE COMPANY
10/21/01

Prepared By	Date	Reviewed By	Date	Utility Review By	Date
[signature]	10-14-01	[signature] BK 10/16/01	10-14-01	[signature]	10/15/01

5/36

Request Number HC-I2-RR-A25
Figure 19

Limitation Due to Pump Concrete Pedestal Obstruction



Request Number HC-I2-RR-A25
Figure 20

Limitation Due to Weld-O-Let Configuration

PSEG Nuclear LLC

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

stomer: PSEG / HC1	System: BB Recirculation Loop "B"	Summary No.: 105585

Component ID: 1-BB-4VCA-011-1-R1			
Reference Point: 0°			
1) Interfering Condition	Branch Connection		
Distance From Centerline	0.0"	To	US Side
Distance From Ref. Point	0.0" CW	To	14.50" CW
2) Interfering Condition	NA		
Distance From Centerline	NA	To	NA
Distance From Ref. Point	NA	To	NA
3) Interfering Condition	NA		
Distance From Centerline	NA	To	NA
Distance From Ref. Point	NA	To	NA
(For All Measurements Indicate: US, DS, CW, CCW)			

Applicable Report No: UT-04-317, UT-04-318, UT-04-319

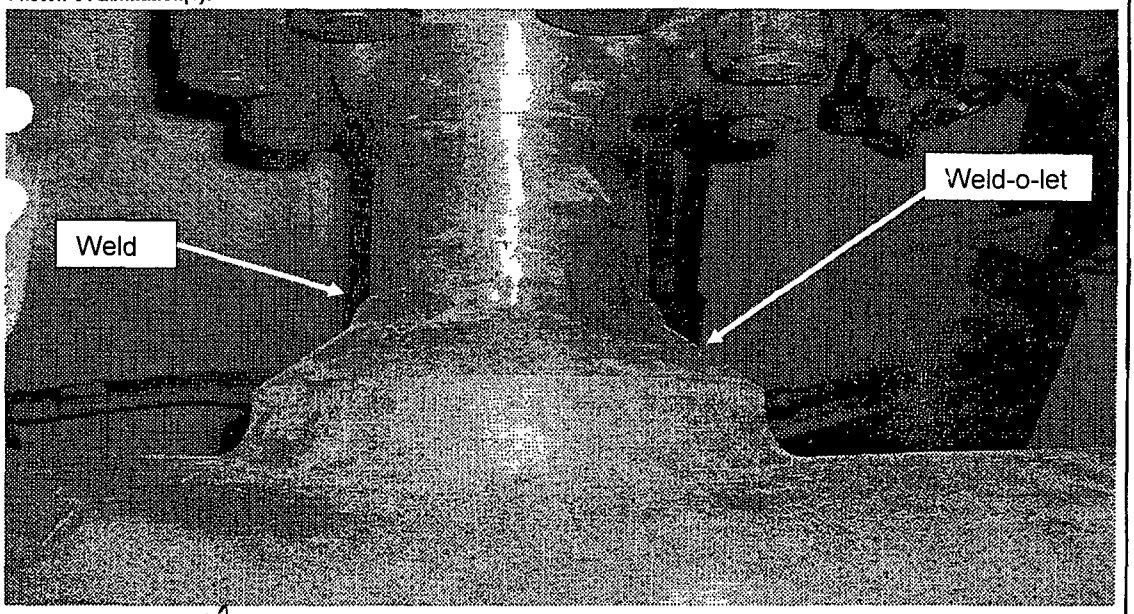
No examination performed upstream due to the configuration of the branch connection.

	Upstream Exam %	Downstream Exam %
Axial	0%	100%
Circ CW	0%	100%
Circ CCW	0%	100%

(Calculations and/or Comments above)

Total Exam Coverage: 50%

Sketch Of Limitation(s):



(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Examiner: A A Conti	Level: III	Date: 03-30-05	Examiner: W J Persinger Level: II Date: 03-30-05
iewer: Bob Kellerhall			Date: 4/7/05
Customer: John O'Neil			Date: 4/7/05

Request Number HC-I2-RR-A25
Figure 21

Limitation Due to Weld-O-Let Configuration

PSEG Nuclear LLC

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

Customer: PSEG / HC1	System: BB Recirculation Loop A	Summary No.: 105790

Component ID: 1-BB-4VCA-012-1-R1

Reference Point: 0°

1) Interfering Condition: Branch Connection

Distance From Centerline	0.0"	To	US Side
Distance From Ref. Point	0.0" CW	To	14.50" CW

2) Interfering Condition: NA

Distance From Centerline	NA	To	NA
Distance From Ref. Point	NA	To	NA

3) Interfering Condition: NA

Distance From Centerline	NA	To	NA
Distance From Ref. Point	NA	To	NA

(For All Measurements Indicate: US, DS, CW, CCW)

Applicable Report No: UT-04-314, UT-04-315, UT-04-316

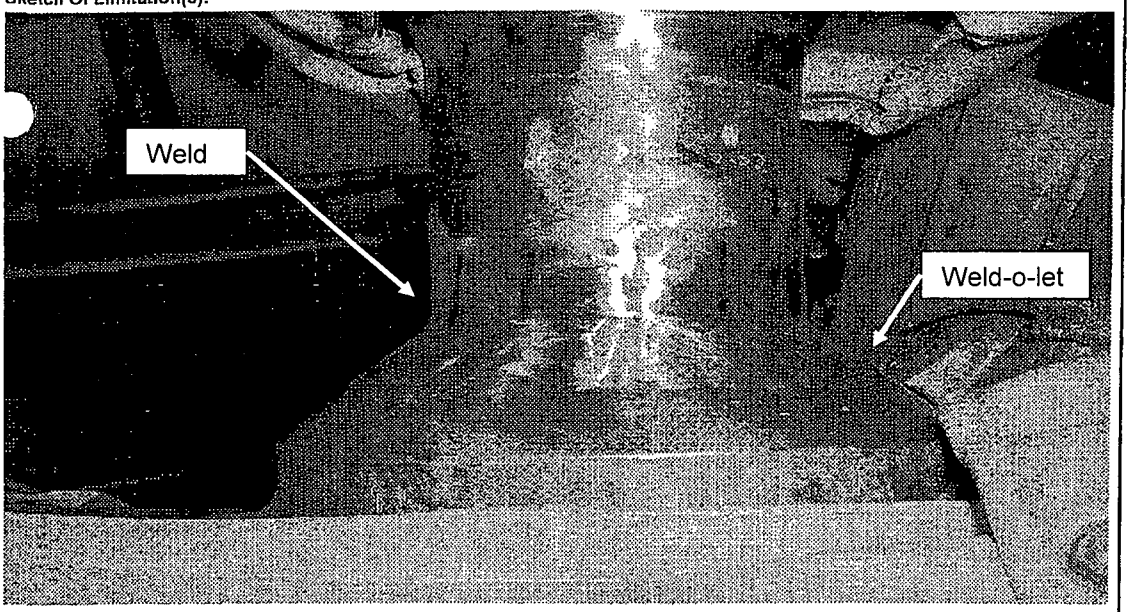
No examination performed upstream due to the configuration of the branch connection.

	Upstream Exam %	Downstream Exam %
Axial	0%	100%
Circ CW	0%	100%
Circ CCW	0%	100%

(Calculations and/or Comments above)

Total Exam Coverage: 50%

Sketch Of Limitation(s):



(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Examiner: Persinger, Walter Level: II Date: 04-03-05	Examiner: Crull, Peter Level: III/IHC Date: 04-03-05
Reviewer: Kellerhall, Bob Bob Kellerhall II	Date: 4/7/05
Customer: O'Neil, John IP	Date: 4/9/05

Request Number HC-I2-RR-A25
Figure 22

Limitation due to Valve Taper and Weld Crown

PSEG Nuclear LLC

Weld Thickness & Contour (UT-04-248 Page 3 of 3)

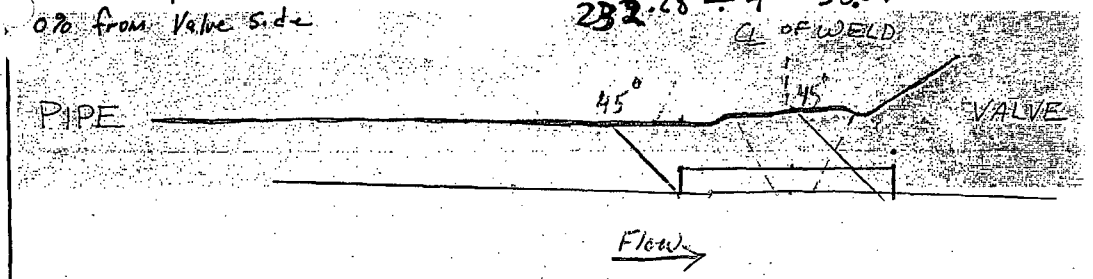
Sum#	109810	Component I.D.	1-BG-6DBA-001-29	Description	PIPE TO VALVE
Unit	☐ Salem 1 ☐ Salem 2 ☑ Hope Creek	Location	☑ 0° ☐ 90° ☐ 180° ☐ 270°		

Photograph

Reviewed & Approved
Date: 11/23/04
NDE Principle Level III
PSEG
Nuclear LLC

CC +CCW ~~71.5%~~ 71.53% Exam Volume Contour 71.53
~~10/7/08~~
71.53
89.22
000
232.28 ÷ 4 = 58.07 %

89.22 % from UPSTREAM
0% from Valve Side



Dimensions

#	Description	Dim	Comments
T1	☑ Pipe ☐ Elbow ☐ Valve ☐ Tee Upstream	.471"	
T2	Toe of weld upstream	.487"	
T3	Weld Thickness	.558"	
T4	Toe of weld downstream	N/A	
T5	☐ Pipe ☐ Elbow ☑ Valve ☐ Tee Downstream	N/A	
	Limitations (if yes attach photo) ☑ Yes ☐ No		
	Is Weld Identification Marked ☐ Yes ☑ No		
	Is Lo Marked ☐ Yes ☑ No		
	Can weld be visually defined ☑ Yes ☐ No		

Examined By: Persinger, Walter Date: 11/17/04

NDE Specialist Review: Bob Kellerhall Date: 11/22/04