FEB 0 7 2019

L-2019-034
10 CFR 50.4
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Unit 1
Docket No. 50-335
In-Service Inspection Plans
Fourth Ten-Year Interval
Unit 1 Relief Requests 15 and 16

In accordance with 10 CFR 50.55a(g)(5)(iii), Florida Power & Light (FPL) is submitting two relief requests (RR) due to inservice inspection (ISI) impracticality.

Due to the configuration of the welds included within RRs 15 and 16, it was not possible to obtain ultrasonic interrogation of greater than 90% of the required examination volume due to interference caused by configuration and/or permanent attachments. These areas were found during the 4th 10-year inservice inspection interval.

The St. Lucie Unit 1 fourth ISI interval ended on February 10, 2018.

The attachments contain the justification for these reliefs.

Please contact Ken Frehafer at 772-467-7748 if there are any questions about this submittal.

Very truly yours,

Michael J. Snyder
Licensing Manager
St. Lucie Plant

Attachments

MJS/KWF

cc: USNRC Regional Administrator, Region II
USNRC Senior Resident Inspector, St. Lucie Units 1 and 2

Relief Request RR#15
In Accordance with 10CFR50.55a(g)(5)(iii)

--Inservice Inspection Impracticality--

1. ASME Code Component(s) Affected

Class 2 pressure retaining welds in piping

2. Applicable Code Edition and Addenda

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 2001 Edition through the 2003 Addenda as amended by 10CFR50.55a is the code of record for the St. Lucie Unit 1, 4th 10-year interval. ASME Section XI, 2001 Edition through the 2003 Addenda as amended by 10CFR50.55a was utilized for Appendix VIII.

3. Applicable Code Requirement

Exam Cat.	Item No.	Examination Requirements
C-F-1	C5.11	Essentially 100% volumetric and surface examination of circumfere welds ≥3/8" nominal wall thickness for piping >4" nominal pipe size.
C-F-1	C5.21	Essentially 100% volumetric and surface examination of circumfere welds >1/5" nominal wall thickness for piping ≥2" and ≤4" nominal pipe s

As defined by ASME Code Case N-460, essentially 100% means more than 90% of the examination volume of each weld where reduction in coverage is due to interference by another component or part geometry.

4. Impracticality of Compliance

Due to the configuration of the welds included within this relief request, it is not possible to meet the examination coverage requirements of the ASME Code, Section XI, 2001 Edition through the 2003 Addenda as clarified by Code Case N-460. Relief is requested in accordance with 10CFR50.55a(g)(5)(iii). These areas were found during the 4th 10-year inservice inspection interval.

When a component has conditions, which limit the examination volume, Florida Power and Light is required to submit the information to the enforcement and regulatory authorities having jurisdiction at the plant site. This Relief Request has been written to address areas where those types of conditions exist and the required amount of coverage was reduced below the minimum acceptable.

When examined, the welds listed within this request did not receive the required code volume coverage due to their configuration and/or the presence of permanent attachments. These scanning limitations prohibit essentially 100% ultrasonic examination coverage of the required examination volume.

The Table included in this Relief Request summarizes the percent of coverage credited and references specific figures that show the extent of coverage.

Relief is requested from the ASME Boiler and Pressure Vessel Code required volume as identified in Figure IWC-2500-7(a).

5. Burden Caused by Compliance

It is not possible to obtain ultrasonic interrogation of greater than 90% of the required examination volume due to interference caused by configuration and/or permanent attachments. Examinations are performed to the maximum extent possible. The Ultrasonic (UT) techniques for each weld were reviewed to determine if additional coverage could be achieved. For the welds listed in the Table, FPL determined that removal of the obstruction was not possible without significant work, increased radiation exposure, and/or damage to the plant. Additional weld preparation by welding or metal removal is a modification of the examination area requiring significant engineering and construction personnel support.

Radiography is impractical due to the amount of work being performed in the areas on a 24-hour basis. This would result in numerous work-related stoppages and increased exposure due to the shutdown of and startup of other work in the areas. The water must be drained from systems where radiography is performed, which increases the radiation dose rates over a much broader area than the weld being examined. There would be significant burden associated with the performance of weld or area modifications or radiography in order to increase the examination coverage.

6. Proposed Alternative and Basis for Use

Proposed Alternative

1) Periodic system pressure tests in accordance with ASME Section XI Category C-H, Table IWC-2500-1.

2) Conduct ultrasonic examinations to the maximum extent possible.

3) Regular walkdowns by operations personnel and system engineers are performed on Class 2 systems to check for leakage, piping configuration, and/or damage. During outages, system engineers walkdown Class 2 systems inside containment. This walkdown is performed to look for system anomalies that could affect plant performance.

Basis

The attached Table provides the percent of coverage credited and references specific figures that illustrate the extent of coverage for each weld. The examination figures of ASME Section XI, 2001 Edition through the 2003 Addenda define the examination volume required. The system, diameter, pipe schedule and material are identified for each item within the Table. The system, diameter, pipe schedule and material are identified for each item within the Table. The angles, Ultrasonic wave modes (Shear-S or Longitudinal-L) that were employed for examination and impracticality of compliance are listed for each weld. Arrows and lines on the figures illustrate the UT transducer beam direction and extent of the area examined.

10CFR 50.55a(g)(4) recognizes that throughout the service life of a nuclear power facility, components which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements set forth in the ASME Code to the extent practical within the limitations of design, geometry and materials of construction of the components.

FPL performed the examinations to the extent possible. There is no plant-specific, NextEra fleet or industry operating experience regarding potential degradation specific to the subject welds included in this relief request. However, isolated occurrences of stress corrosion cracking have occurred in stainless steel materials in the industry. To address the concerns of these isolated cases, periodic walkdowns by plant personnel provide assurance that any isolated degradation would be identified at the onset before a safety concern could develop.

The Class 2 items identified in the table are located within either the reactor containment building or reactor auxiliary building. Regular walkdowns by operations personnel and system engineers are performed on systems in the reactor auxiliary building to check for leakage, piping configuration, and/or damage. During outages, system engineers perform boric acid walkdowns of all systems inside containment. This walkdown is performed to look for borated system as well as system abnormalities that could affect plant performance. Also, a system pressure test and VT-2 visual examination is performed each refueling outage for Class 1 connections and each period for Class 2 and 3 connections without removal of insulation by examining the accessible and exposed surfaces and joints of the insulation.

Leakage monitoring inside containment at St. Lucie Unit 1 is provided by the reactor cavity (containment) sump inlet flow monitoring system. This system has high level and alert status alarms in the control room. This system has Tech Spec required monitoring (TS 3/4.4.6.2(b) at least once every 12 hours.

All inservice examinations were performed by personnel certified in accordance with IWA-2300 of ASME Section XI 2001 Edition through the 2003 Addenda. UT examinations of the austenitic piping welds utilized equipment, procedures, and personnel qualified in accordance with ASME Section XI, Appendix VIII, Supplement 2, 2001 Edition No Addenda and the Performance Demonstration Initiative (PDI) program.

The UT techniques for each weld were reviewed to determine if additional coverage could be achieved. FPL's procedures require the examiner to make an attempt to achieve complete coverage by using alternative techniques such as using a smaller wedge thus reducing the

distance from the exit point to the front of the wedge, changing angles or reducing the search unit element size. Any alternative equipment is required to be in compliance with the limits specified in the qualified procedure. Alternate techniques were investigated at the time of discovery.

For piping welds performed in accordance with Appendix VIII, Supplement 2, the coverage credited is limited when access can only be obtained from one side. No coverage is claimed past the centerline in the coverage credited in the Table since access for scanning was not available from that side of the weld and the Performance Demonstration Qualification Summary (PDQS) for the qualified procedure, PDI-UT-2, states that "the austenitic single side qualification documented on this summary demonstrates application of best available technology, but do not meet the requirements of 10CFR 50.55a(b)(2)(xvi)(B)." It should be noted that UT was performed through the weld to obtain the maximum possible Code examination volume and, as shown in the figures, the theoretical beam path extends into the far side for the examinations performed. While the coverage is not included in the Table, the techniques employed for the single side examination are noted in the figures and provided for a best effort examination. The coverage obtained was the maximum practical. Therefore, the UT examinations conducted using the Appendix VIII, Supplement 2, qualified procedure provide reasonable assurance for the detection of flaws on the far side of welds where the ultrasonic beam has been transmitted even though not presently qualified.

Surface examinations were performed of all the items listed. In all cases, 100% of the accessible Code required surface area was examined. The surface and volumetric examinations of all the items listed did not reveal any recordable or reportable flaws in the examination zone or adjacent to any volumetric limitations.

The extent of examination volumes achieved via surface and/or volumetric examinations, combined with the system pressure tests and system walk downs, provide assurance of an acceptable level of quality and safety.

7. Duration of Proposed Alternative

This relief request is applicable to the St. Lucie unit 1 Fourth Inservice Inspection Interval which began February 10, 2008 and ended February 9, 2018.

8. References

10CFR50.55a, latest revision.

ASME Section XI, "Rules For Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through the 2003 Addenda and Appendix VIII, Supplement 2 of the 2001 Edition No Addendal.

ASME Section XI, Division 1, Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1"

Table 1

System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Tee to Elbow	SI-208-1-SW-2 (3"-160) Stainless Steel	C5.21	2008	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 80.5%	45°S 60°S 70°S	1	Inservice examination limited due to Tee to Elbow configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Elbow to Valve	SI-208-FW-1 (3"-160) Stainless Steel	C5.21	2008	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	2	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Valve to Pipe	SI-210-FW-1 (4"-80) Stainless Steel	C5.11	2008	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	3	Inservice examination limited to single side access due to Valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Reducer to Tee	SI-219-1-SW-2 (6"-160) Stainless Steel	C5.11	2008	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	4	Inservice examination limited due to single side access due to reducer to tee configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Valve to Pipe	SI-142-FW-1 (6"-160) Stainless Steel	C5.11	2008	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	5	Inservice examination limited to single side access due to Valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

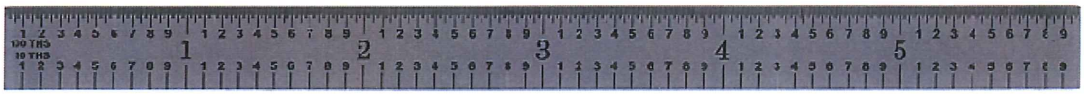
System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Pipe To Valve	SI-112-FW-9A (6"-160) Stainless Steel	C5.11	2008	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	6	Inservice examination limited to single side access due to Valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Flange to Tee	SI-208-1-SW-1 (3"-160) Stainless Steel	C5.21	2010	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 33.33%	45°S 60°S 70°S	7	Inservice examination limited to single side access due to flange to tee configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Pipe to Valve	SI-210-FW-5 (4"-80) Stainless Steel	C5.21	2010	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	8	Inservice examination limited to single side access due to Valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

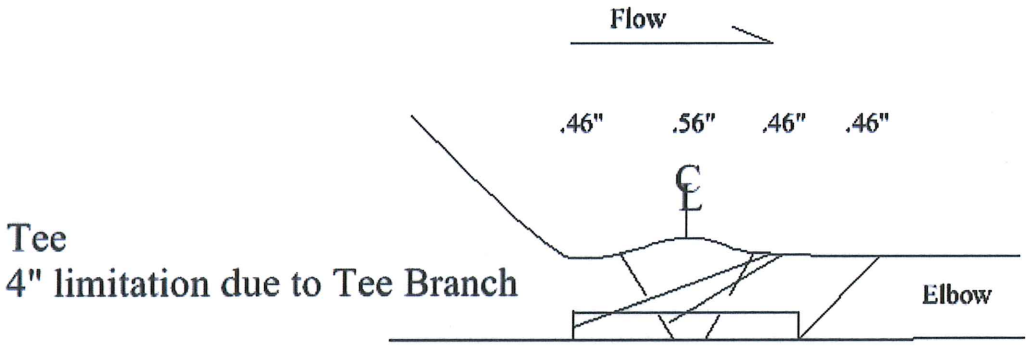
System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Tee to Reducer	SI-213-1-SW-2 (6"-120) Stainless Steel	C5.11	2010	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	9	Inservice examination limited to single side access due to tee configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Tee to Pipe	SI-212-FW-1A (6"-160) Stainless Steel	C5.11	2011	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S 60°L	10	Inservice examination limited to single side access due to tee configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Pipe to Valve	SI-212-FW-1 (6"-160) Stainless Steel	C5.11	2011	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S 60°L	11	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Valve to Pipe	SI-105-FW-1 (6"-160) Stainless Steel	C5.11	2011	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S 60°L	12	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Valve to Pipe	SI-129-FW-1 (6"-160) Stainless Steel	C5.11	2011	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	13	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Pipe to Valve	SI-113-FW-9 (6"-160) Stainless Steel	C5.11	2011	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 60°L	14	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Valve to Pipe	SI-213-FW-2 (6"-120) Stainless Steel	C5.11	2013	Exam Category C-F-1 Item No. C5.11 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	15	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Valve to Pipe	SI-210-FW-4 (4"-80) Stainless Steel	C5.21	2013	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	16	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications

System Configuration	Component ID Diameter-Schedule Material	Code Item #	Year of Exam	Ultrasonic Examination Coverage (%)	Angles(s)/ and Wave Mode	Fig.	Impracticality of Compliance	Surface Examination Results
Pipe to Elbow	SI-211-11-SW-2 (3"-160) Stainless Steel	C5.21	2016	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 83.25%	45°S 60°S 70°S	17	Inservice examination limited to single side access due elbow intradose and pipe side branch connection.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications
Valve to Pipe	SI-209-FW-2 (3"-160) Stainless Steel	C5.21	2016	Exam Category C-F-1 Item No. C5.21 Fig. IWC-2500-7(a) 50%	45°S 60°S 70°S	18	Inservice examination limited to single side access due to valve configuration.	Liquid Penetrant examination performed obtaining 100% coverage No recordable indications





Required Exam Volume - .18 Sq. Inches

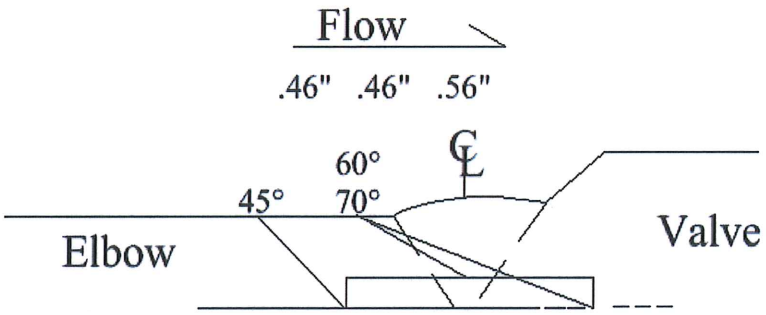
Upstream Required Exam Volume .09 Sq. Inches

Volume Examined on Upstream side - .08 Sq. Inches (Best Effort)

Examination Volume Dimensions: Length 10.5" x Width 1.25" x Height .15" Weld Thickness= .56" Weld Length= 10.5" Weld Width= .75"				
Coverage Summary- Weld # SI-208-1-SW-2				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60/70	61%	61%	100%	100%
70	34%			
			Code Coverage Total	80.5%
		Best Effort Coverage (Max 25%) Total		8.5%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

SI-208-1-SW-2
Figure 1



Required Exam Volume - .18 Sq. Inches

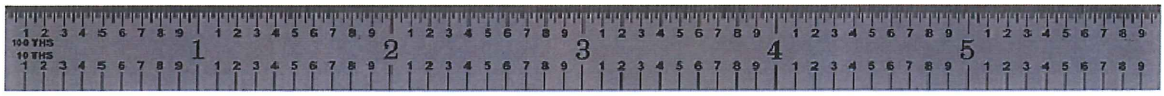
Downstream Required Exam Volume .09 Sq. Inches

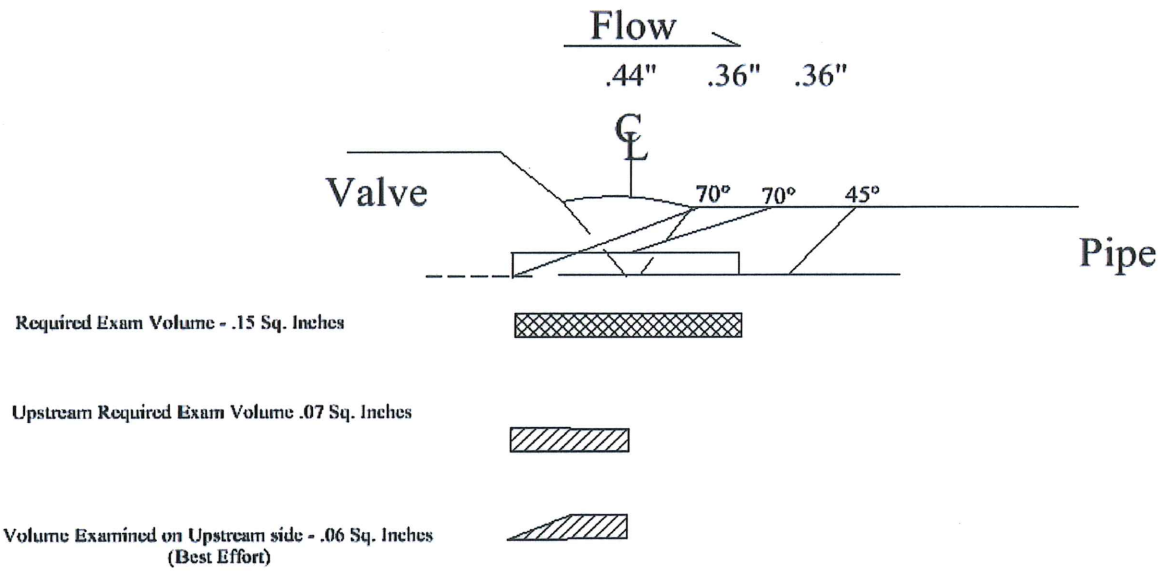
Volume Examined on Downstream side - .06 Sq. Inches
(Best Effort)

Examination Volume Dimensions: Length 13" x Width 1.25" x Height .15"				
Weld Thickness= .56" **Weld Length=** 13" **Weld Width=** .75"				
Coverage Summary- Weld # SI-208-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	**Upstream-Axial**	**Upstream- Circ.**	**Downstream Axial**	**Downstream Circ.**
45/60	100%	100%	0%	0%
70			66%	
			Code Coverage Total	**50%**
		Best Effort Coverage (Max 25%) Total		**16.6%**

Notes:
1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-208-FW-1
Figure 2

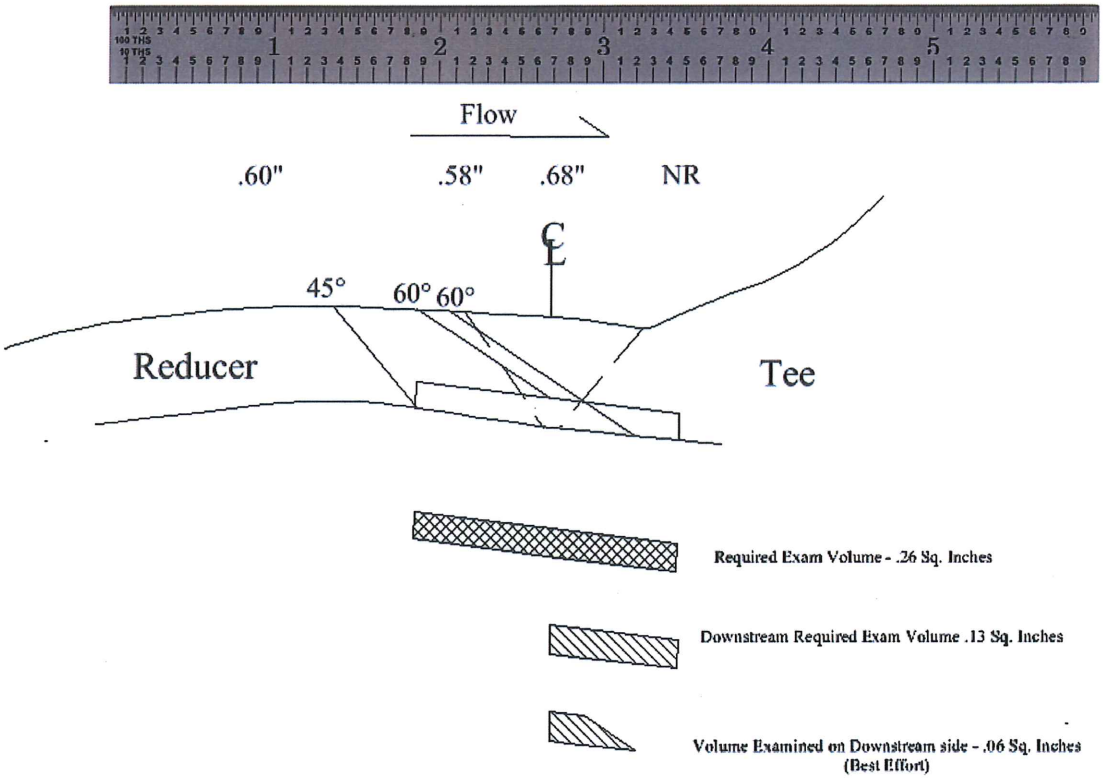




Examination Volume Dimensions: Length 10.5" x Width 1.15" x Height .12" Weld Thickness= .44" Weld Length= 10.5" Weld Width= .65"				
Coverage Summary- Weld # SI-210-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60/70	0%	0%	100%	100%
70	85%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		21%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

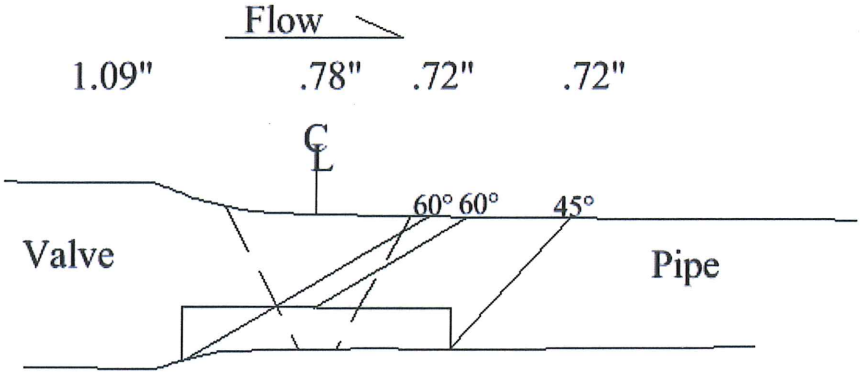
SI-210-FW-1
Figure 3



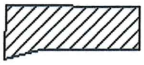
Examination Volume Dimensions: Length 19.5" x Width 1.50" x Height .15"				
Weld Thickness= .68" Weld Length= 19.5" Weld Width= 1.00"				
Coverage Summary- Weld # SI-219-1-SW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	100%	100%	0%	0%
60			46%	
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		11.5%

Notes:
1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-219-1-SW-2
Figure 4



Required Exam Volume - .40 Sq. Inches



Upstream Required Exam Volume .21 Sq. Inches

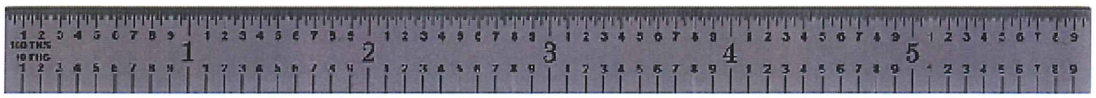
Volume Examined on Upstream side - .12 Sq. Inches
(Best Effort)

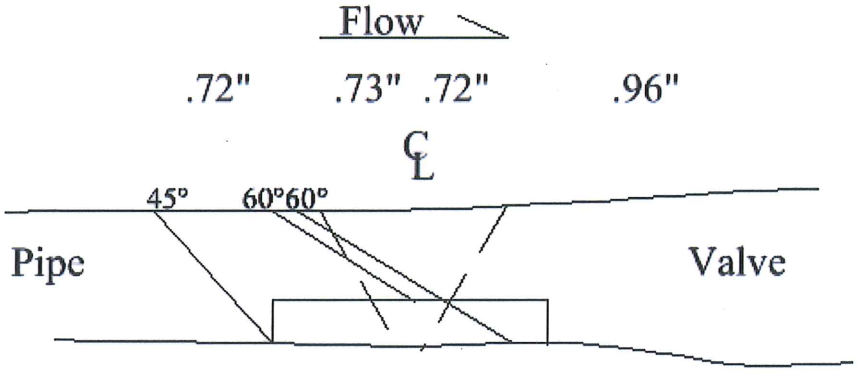
Examination Volume Dimensions: Length 19.5" x Width 1.50" x Height .24"				
Weld Thickness= .78" Weld Length= 19.5" Weld Width= 1.00"				
Coverage Summary- Weld # SI-142-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	57%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		14.02%

Notes:

1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-142-FW-1
Figure 5





Required Exam Volume - .36 Sq. Inches

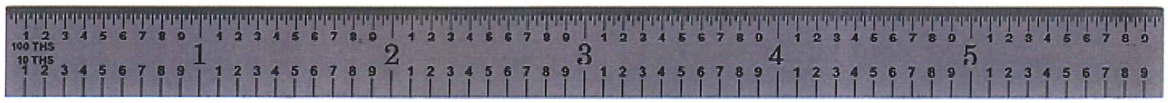
Downstream Required Exam Volume .18 Sq. Inches

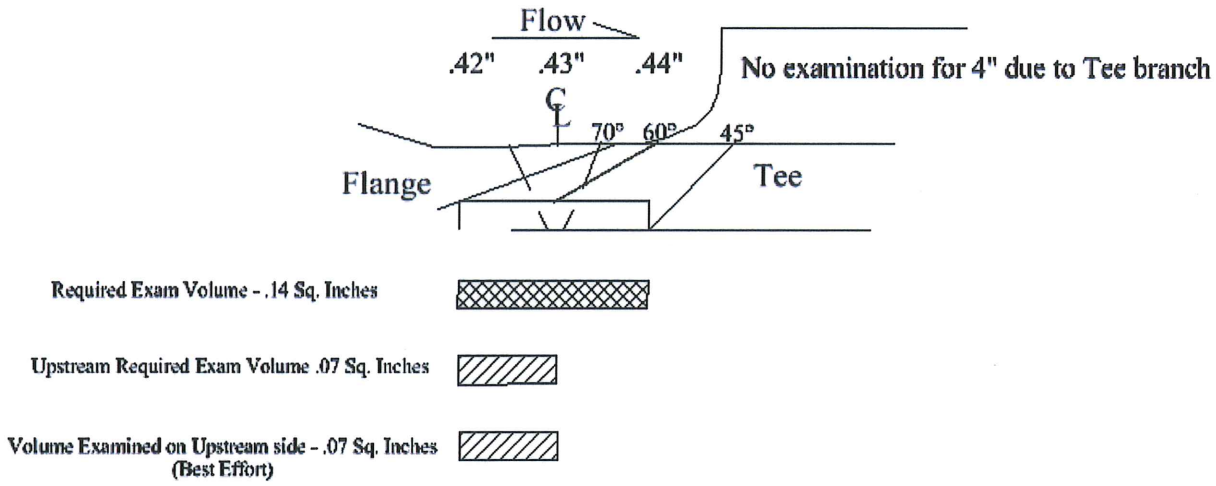
Volume Examined on Downstream side - .09 Sq. Inches
(Best Effort)

Examination Volume Dimensions: Length 19.5" x Width 1.50" x Height .24" Weld Thickness= .72" Weld Length= 19.5" Weld Width= 1.00"				
Coverage Summary- Weld # SI-112-FW-9A				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	100%	100%	0%	0%
60			50%	
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		12.5%

Notes:
1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-112-FW-9A
Figure 6

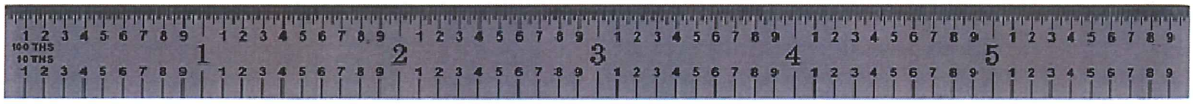


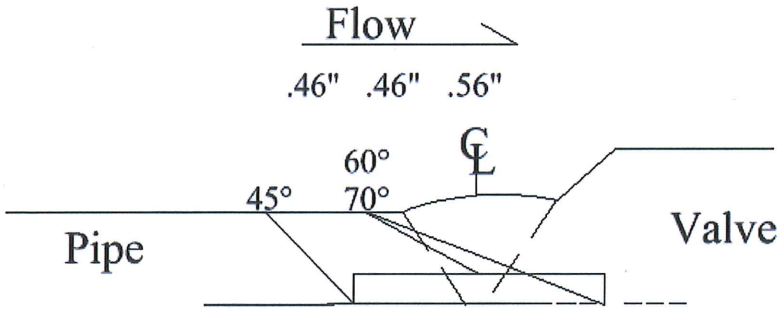


Examination Volume Dimensions: Length 12" x Width .98" x Height .12"				
Weld Thickness= .43" Weld Length= 12" Weld Width= .48"				
Coverage Summary- Weld # SI-208-1-SW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream-Circ.	Downstream Axial	Downstream Circ.
45/60/70	0%	0%	67%	67%
70	33%			
			Code Coverage Total	33.5%
		Best Effort Coverage (Max 25%) Total		8.25%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

SI-208-1-SW-1
Figure 7





Required Exam Volume - .18 Sq. Inches

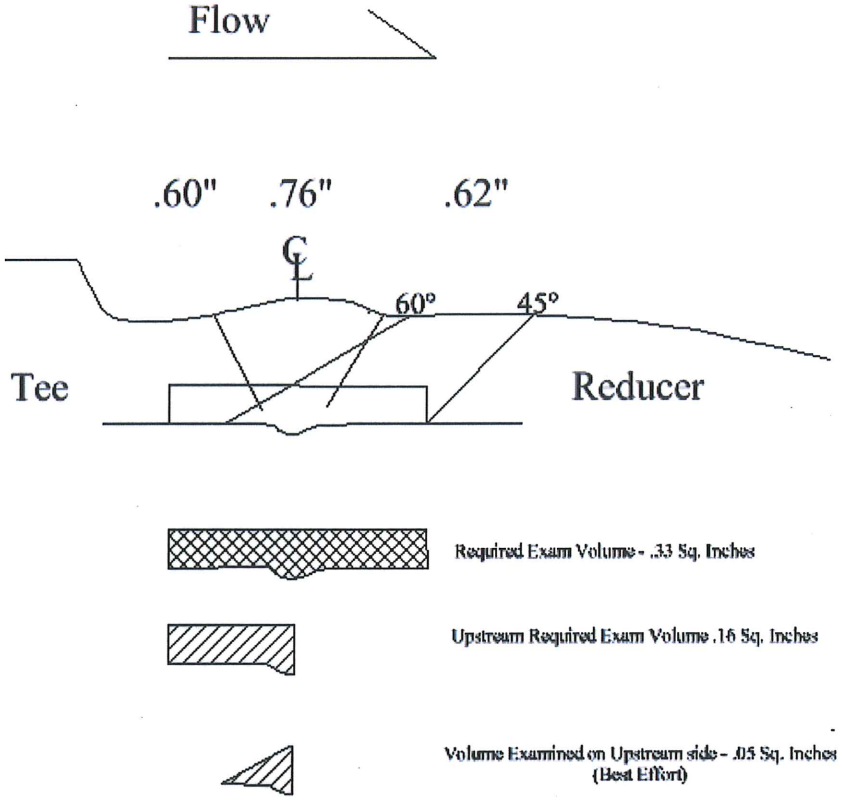
Downstream Required Exam Volume .09 Sq. Inches

Volume Examined on Downstream side - .06 Sq. Inches
(Best Effort)

Examination Volume Dimensions: Length 13" x Width 1.25" x Height .15" Weld Thickness= .56" Weld Length= 13" Weld Width= .75"				
Coverage Summary- Weld # SI-210-FW-5				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	100%	100%	0%	0%
70			66%	
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		16.6%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

SI-210-FW-5
Figure 8

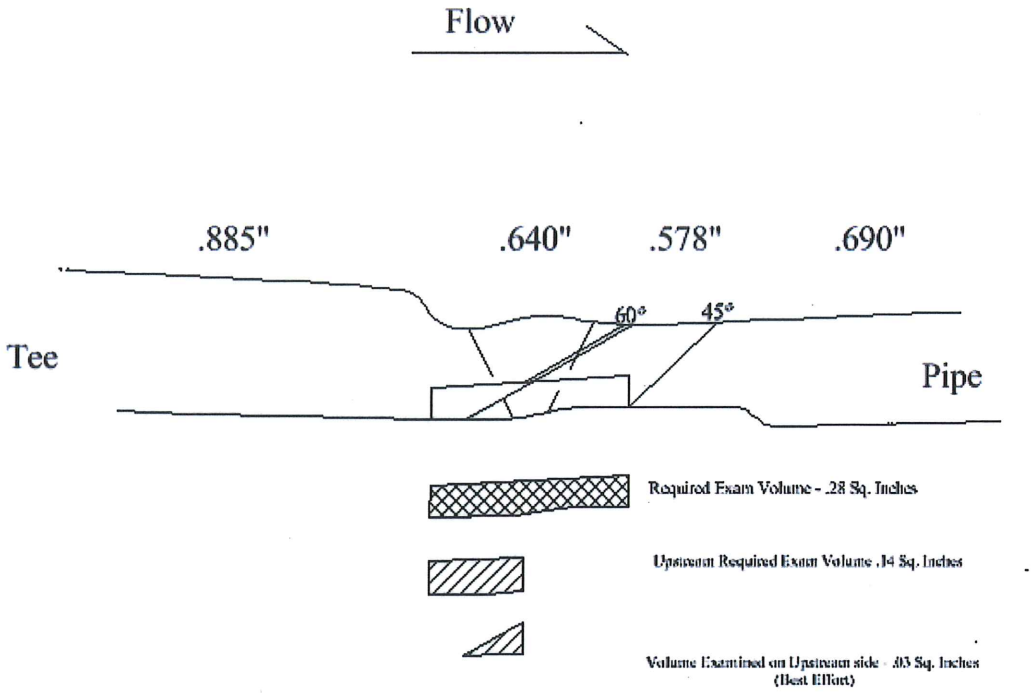


Examination Volume Dimensions: Length 19.5" x Width 1.50" x Height .21"				
Weld Thickness= .72" Weld Length= 19.5" Weld Width= 1.00"				
Coverage Summary- Weld # SI-213-1-SW-2				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream-Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	31%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		7.8%

Notes:

1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

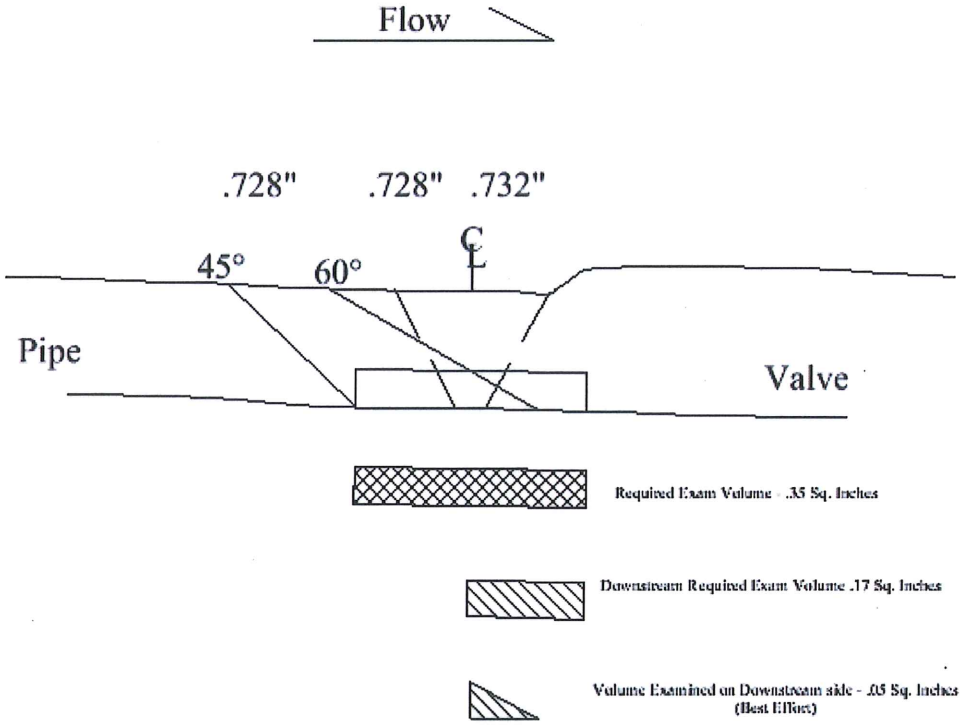
SI-213-1-SW-2
Figure 9



Examination Volume Dimensions: Length 21" x Width 1.40" x Height .21"				
Weld Thickness= .64" Weld Length= 21" Weld Width= .90"				
Coverage Summary- Weld # SI-212-FW-1A				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	21%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		5%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

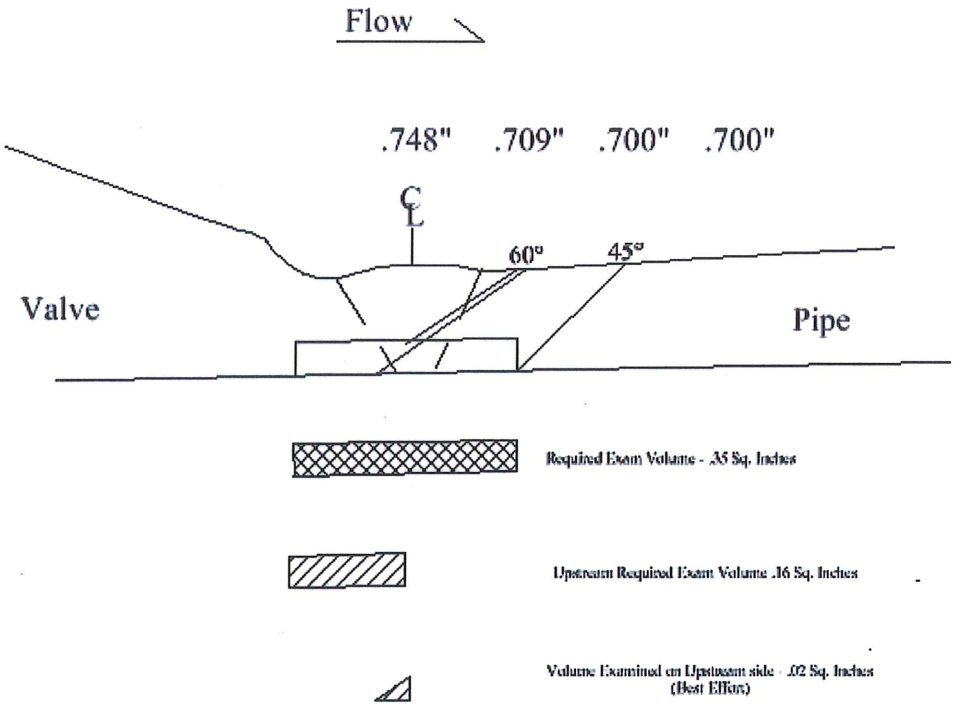
SI-212-FW-1A
Figure 10



Examination Volume Dimensions: Length 21" x Width 1.50" x Height .22"				
Weld Thickness= .732" Weld Length= 21" Weld Width= 1.00"				
Coverage Summary- Weld # SI-212-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	100%	100%	0%	0%
60			29%	
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		7%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

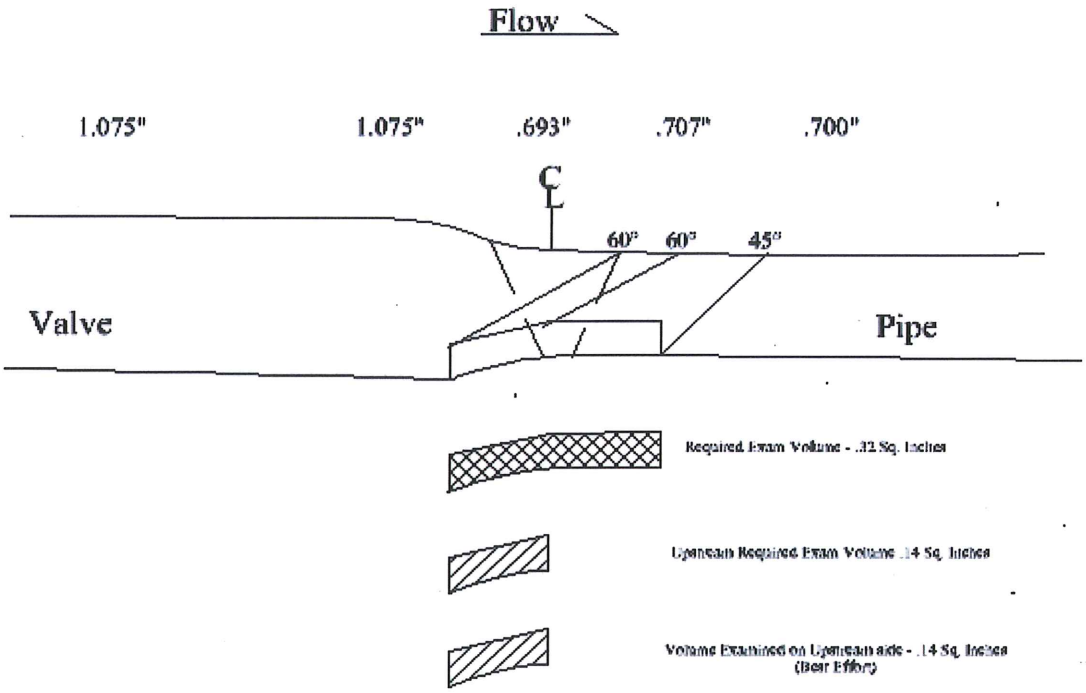
SI-212-FW-1
Figure 11



Examination Volume Dimensions: Length 21" x Width 1.50" x Height .22" Weld Thickness= .748" Weld Length= 21" Weld Width= 1.00"				
Coverage Summary- Weld # SI-105-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	12.5%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		3%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

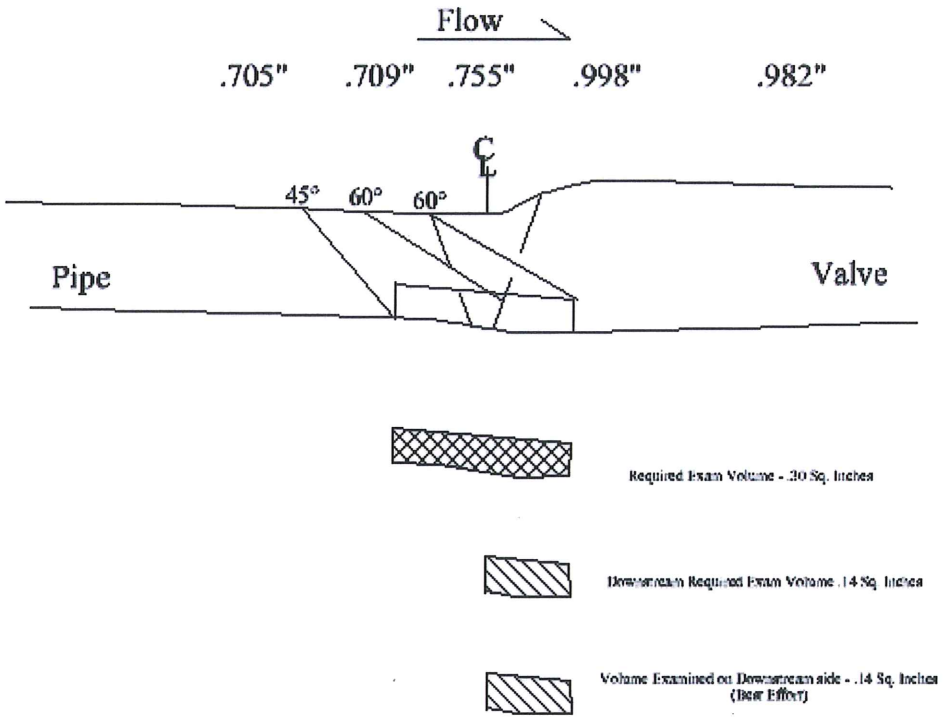
SI-105-FW-1
Figure 12



Examination Volume Dimensions: Length 21" x Width 1.30" x Height .22"				
Weld Thickness= .693" Weld Length= 21" Weld Width= .80"				
Coverage Summary- Weld # SI-129-FW-1				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	100%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		25%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

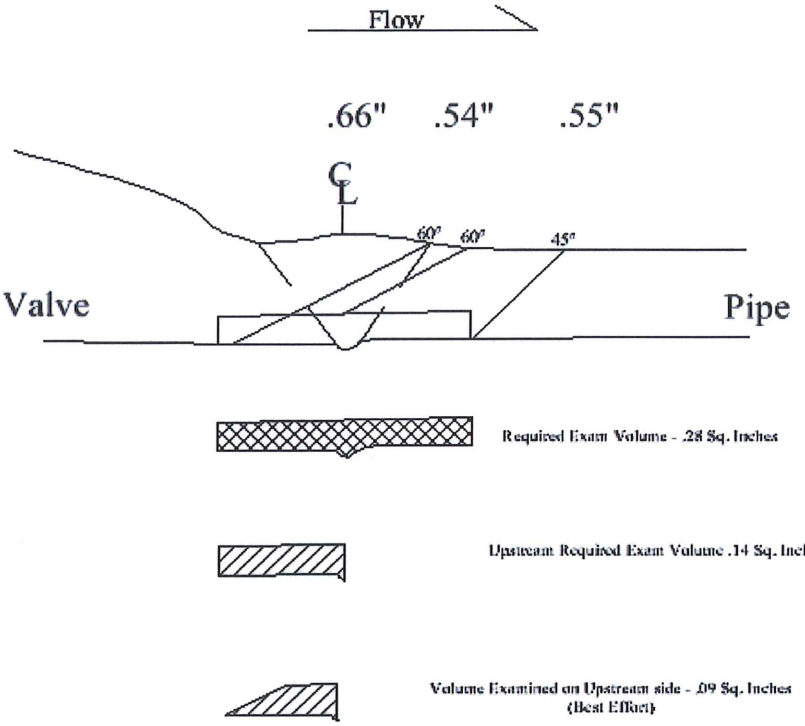
SI-129-FW-1
Figure 13



Examination Volume Dimensions: Length .21" x Width .130" x Height .22"				
Weld Thickness= .755" Weld Length= 21" Weld Width= .80"				
Coverage Summary- Weld # SI-113-FW-9				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	100%	100%	0%	0%
60			100%	
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		25%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

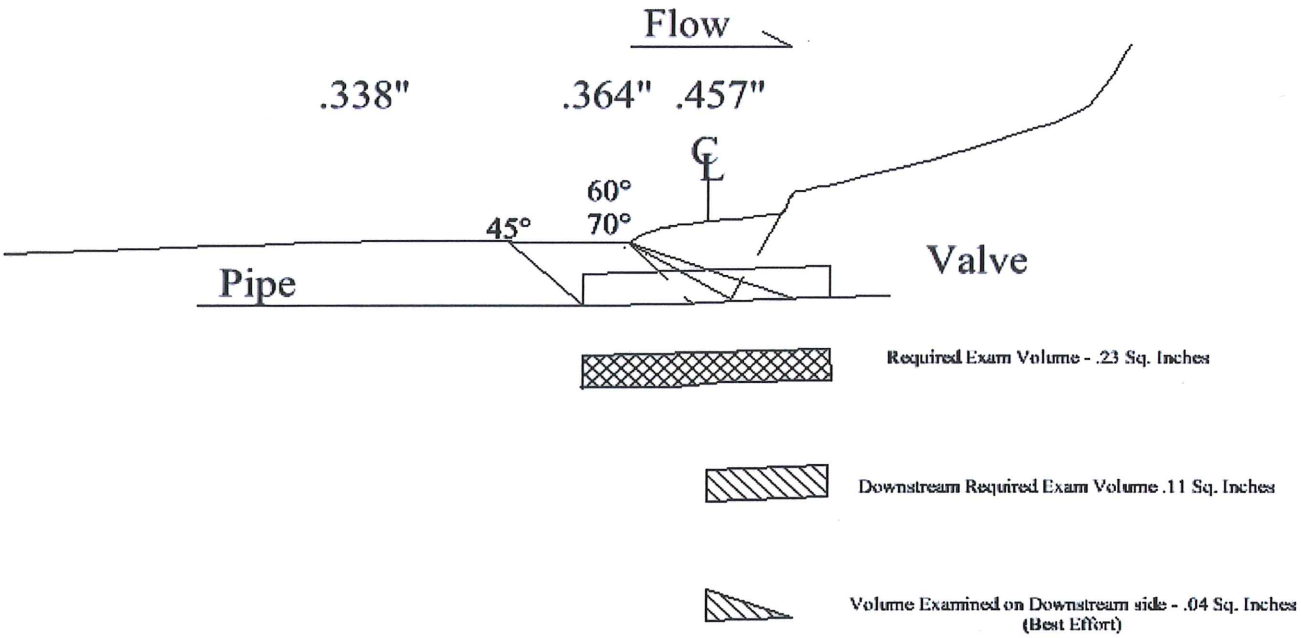
SI-113-FW-9
Figure 14



Examination Volume Dimensions: Length 21" x Width 1.55" x Height .19" Weld Thickness= .66" Weld Length= 21" Weld Width= 1.05"				
Coverage Summary- Weld # SI-213-FW-2				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	Upstream-Axial	Upstream- Circ.	Downstream Axial	Downstream Circ.
45/60	0%	0%	100%	100%
60	64%			
			Code Coverage Total	50%
		Best Effort Coverage (Max 25%) Total		16%

Notes:
1. Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure
2. Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage

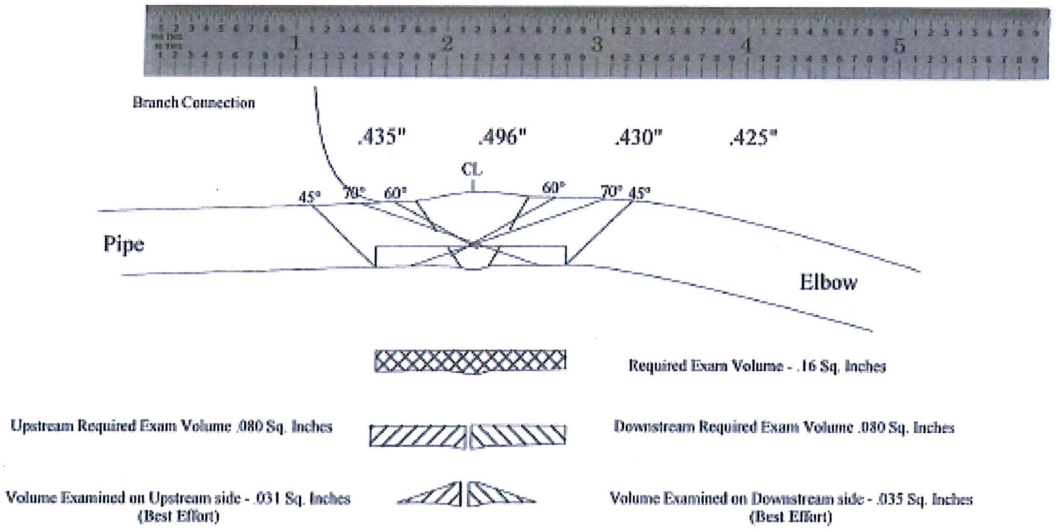
SI-213-FW-2
Figure 15



Examination Volume Dimensions: Length 14.2" x Width 1.35" x Height .18"				
Weld Thickness= .54" Weld Length= 14.2" Weld Width= .85"				
Coverage Summary- Weld # SI-210-FW-4				
	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	**Upstream-Axial**	**Upstream- Circ.**	**Downstream Axial**	**Downstream Circ.**
45/60	100%	100%	0%	0%
70			36%	
			Code Coverage Total	**50%**
		Best Effort Coverage (Max 25%) Total		**9%**

Notes:
1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-210-FW-4
Figure 16



3" limtation on elbow intradose due to configuration
4.5" Limitation on pipe side due to branch connection

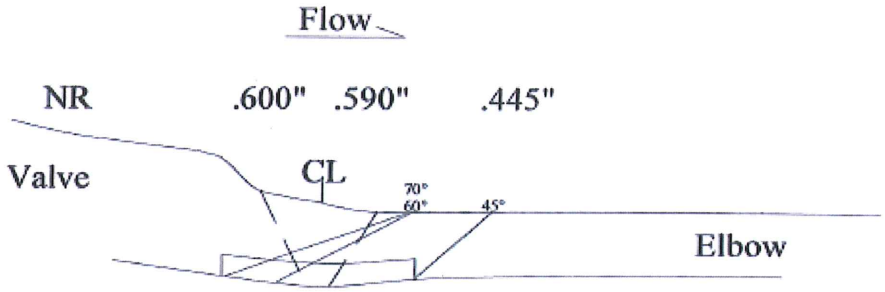
Examination Volume Dimensions: Length 11.25" x Width 1.15" x Height .14"
Weld Thickness= .496" Weld Length= 11.25" Weld Width= .65"

Coverage Summary- Weld # SI-211-11-SW-2

	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	**Upstream-Axial**	**Upstream- Circ.**	**Downstream Axial**	**Downstream Circ.**
45/60/70	60%	100%	73%	100%
70	15.5% (best effort)		11% (best effort)	
			Code Coverage Total	**83.25%**
		Best Effort Coverage (Max 25%) Total		**13.25%**

Notes:
1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**
3. **Best Effort Coverage is in the Limited area only.**

SI-211-11-SW-2
Figure 17



(Area dimensions determined with TurboCAD 19)

Examination Volume Dimensions: Length 19.0" x Width 1.30" x Height .15"
Weld Thickness= .590" Weld Length= 19.0" Weld Width= .80"

Coverage Summary – SI-209-FW-2

	Required Scans- each has a weighing factor of 100% for complete coverage			
Angle	**Upstream-Axial**	**Upstream- Circ.**	**Downstream Axial**	**Downstream Circ.**
45/60/70	0%	0%	100%	100%
70		70% (Best Effort)		
			Code Coverage Total	**50%**
		Best Effort Coverage (Max 25%) Total		**17.5%**

Notes:

1. **Code Coverage refers to the maximum percentage of the required examination volume that is effectively examined with the qualified examination procedure**
2. **Best Effort Coverage refers to the required examination volume past the centerline that is examined in the axial beam direction with an Appendix VIII demonstrated procedure for single sided coverage**

SI-209-FW-2
Figure 18

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Relief Request RR#16
In Accordance with 10CFR50.55a(g)(5)(iii)

--Inservice Inspection Impracticality--

1. ASME Code Component(s) Affected

Class 1 pressure retaining welds in the reactor pressure vessel (RPV).

2. Applicable Code Edition and Addenda

The Code of record for St. Lucie Unit 1 (PSL-1) is the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through the 2003 Addenda as modified by 10CFR50.55a. The ASME, Section XI, 2001 Edition through the 2003 Addenda as amended by 10CFR50.55a was utilized for Appendix VIII.

3. Applicable Code Requirement

Exam Cat.	Item No.	Examination Requirements
B-A	B1.10 B1.11 B1.12	Essentially 100% volumetric examination of all longitudinal and circumferential shell welds (does not include shell to flange weld).
B-A	B1.20 B1.21 B1.22	Essentially 100% volumetric examination of accessible length of circumferential and meridional head welds.

As defined by ASME Code Case N-460, essentially 100% means more than 90% of the examination volume of each weld where reduction in coverage is due to interference by another component or part geometry.

4. Impracticality of Compliance

Due to the configuration of the Reactor Vessel, it is impractical to meet the examination coverage requirements of the ASME Code, Section XI, 2001 Edition through the 2003 Addenda as clarified by Code Case N-460. Relief is requested in accordance with 10CFR50.55a(g)(5)(iii). These areas were found during the 4th 10-year inservice inspection interval.

When examined, the welds listed within this request did not receive the required code volume coverage due to their configuration and/or the presence of permanent attachments. These scanning limitations prohibit essentially 100% ultrasonic examination coverage of the required examination volume.

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Described below, coupled with figures, are details of the examination limitations by weld description. Figure 1 provides an illustration of the contact UT head used for scanning from the vessel shell. Figures 2 through 15 provide the dimensions and locations of obstructions and views of each of the affected welds showing the interference caused by the permanent attachments on the Trans World System (TWS) robot and the affect of the obstructions on scanning.

RPV Intermediate Shell-to-Lower Shell Circumferential Weld (9-203)

Examination Category B-A, Item B1.11

The examination of the Figure IWB-2500-1 A-B-C-D volume is limited due to the six surveillance capsule holders. Access to approximately 17% of the examination volume is restricted. The remaining examination volume was examined with techniques which have been qualified by demonstration in accordance with Supplements 4 & 6 of the ASME Code Section XI, Appendix VIII, 2001 Edition using the Performance Demonstration Initiative Protocol. This weld was examined from both sides of the weld, scanning both parallel and perpendicular to the weld. The ultrasonic examinations identified six IWB-3510 acceptable small slag inclusion indications in accordance with the ASME Code, Section XI, 2001 Edition through 2003 Addenda.

Figure 2 is a view of the TWS robot in the vessel shell region showing scan limitations caused by the six surveillance capsule holders. The weld is covered by the six surveillance capsule holders. Figure 3 provides dimensional information for the six surveillance capsule holders and their affect on scanning. Figure 4 is a roll out view showing the reactor vessel inside surface scan areas (cross hatched) and the locations of limited areas due to the presence of the six surveillance capsule holders.

RPV Circumferential Bottom Head-to-Lower Shell Weld (10-203)

Examination Category B-A, Item B1.21

The examination of the Figure IWB-2500-3 A-B-C-D volume is limited due to the proximity of the Core Barrel Stabilizers and Core Lugs. Access to approximately 29% of the examination volume is restricted. The remaining examination volume was examined with techniques which have been qualified by demonstration in accordance with Supplements 4 & 6 of the ASME Code Section XI, Appendix VIII, 2001 Edition using the Performance Demonstration Initiative Protocol. This weld was examined from both sides of the weld, scanning both parallel and perpendicular to the weld. The ultrasonic examination identified twenty one IWB-3510 acceptable small slag inclusion indications in accordance with the ASME Code, Section XI, 2001 Edition through 2003 Addenda.

Figure 5 is a view of the TWS robot in the vessel shell region showing scan limitations caused by the Core Barrel Stabilizers and Core Lugs. Figure 6 provides dimensional information for the core barrel stabilizers and core lugs and their locations in the reactor vessel. Figure 7 is a roll out view showing the reactor vessel inside surface scan areas

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(cross hatched) for the bottom head-to-lower shell weld and the locations of limited areas due to the presence of the core barrel stabilizers and core lugs.

RPV Upper Shell Longitudinal Seam Weld at 15 Degrees (1-203B)

Examination Category B-A, Item B1.12

The examination of the Figure IWB-2500-2 A-B-C-D volume is limited due to the outlet nozzle at zero degrees integral extension. Access to approximately 37% of the examination volume is restricted. The remaining examination volume was examined with techniques which have been qualified by demonstration in accordance with Supplements 4 & 6 of the ASME Code Section XI, Appendix VIII, 2001 Edition using the Performance Demonstration Initiative Protocol. This weld was examined from both sides of the weld, scanning both parallel and perpendicular to the weld. These ultrasonic examination did not reveal any recordable or reportable flaws in accordance with the ASME Code, Section XI, 2001 Edition through the 2003 Addenda.

Figures 8 and 9 are views of the TWS robot in the vessel shell region showing the scan limitation caused by the outlet nozzle at zero degrees integral extension. Figure 10 provides dimensional information and the affect the outlet nozzle at zero integral extension had on scanning. Figure 11 is a roll out view showing the reactor vessel inside surface scan areas (cross hatched) for the upper shell longitudinal seam weld at 15 degrees.

RPV Lower Head Peel Segment Welds (204-03-A through F)

Examination Category B-A, Item B1.22

The examination of the Figure IWB-2500-3 E-F-G-H volume is limited due to the proximity of the flow baffle. Access to approximately 57% of welds 204-03-B, 204-03-D, 204-03-F and 47% of welds 204-03-A, 204-03-C, 204-03-E examination volume is restricted due to limited access behind the flow baffle. The remaining examination volume was examined with techniques which have been qualified by demonstration in accordance with Supplements 4 & 6 of the ASME Code Section XI, Appendix VIII, 2001 Edition using the Performance Demonstration Initiative Protocol. These welds were examined from both sides of the weld, scanning both parallel and perpendicular to the weld. The ultrasonic examination of weld 204-03-A identified one IWB-3510 acceptable small slag inclusion indication in accordance with the Code, Section XI, 2001 Edition through the 2003 Addenda. These ultrasonic examination of the remaining welds did not reveal any recordable or reportable flaws in accordance with the ASME Code, Section XI, 2001 Edition through the 2003 Addenda.

Figures 12 and 13 are views of the TWS robot in the vessel shell region showing scan limitations due to limited access behind the flow baffle and core lugs. Figure 14 provides dimensional information for the core lugs and core baffle and their affect on scanning.

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Figure 15 is a roll out view showing the reactor vessel inside surface scan areas (cross hatched) for the peel segment welds and the locations of the core lugs.

5. Burden Caused by Compliance

It is not possible to obtain ultrasonic interrogation of greater than 90% of the required examination volume due to interference caused by configuration and/or permanent attachments. Examinations were performed to the maximum extent possible. For the welds listed in this relief request, it is not possible to remove the permanently attached obstructions to increase ASME Code coverage without significant work, increased radiation exposure, and/or damage to the plant.

6. Proposed Alternative and Basis for Use

Proposed Alternative

1) Periodic system pressure tests in accordance with ASME Section XI Category B-P, Table IWB-2500-1.

2) Conduct ultrasonic examinations to the maximum extent possible.

Basis

FPL performed inservice examinations of selected welds in accordance with the requirements of 10CFR50.55a, plant technical specifications, and the ASME Boiler and Pressure Vessel Code, Section XI, 2001 Edition through the 2003 Addenda and the 2001 Edition was utilized for ASME Section XI, Appendix VIII. When a component has conditions which limit the examination volume, Florida Power and Light is required to submit the information to the enforcement and regulatory authorities having jurisdiction at the plant site. This Relief Request has been written to address areas where those types of conditions exist and the required amount of coverage was reduced below the minimum acceptable.

FPL performed mechanized ultrasonic examinations of the reactor vessel during the 2018 (SL1-28) refueling outage.

10 CFR 50.55a(g)(4) recognizes that throughout the service life of a nuclear power facility, components which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements set forth in the ASME Code to the extent practical within the limitations of design, geometry and materials of construction of the components.

The mechanized techniques employed for examination from the RPV inside have been demonstration in accordance with Supplements 4 & 6 of the ASME Code Section XI, Appendix VIII, 2001 Edition using the Performance Demonstration Initiative Protocol. The Ultrasonic (UT) techniques for each weld were reviewed to determine if additional coverage could be achieved. Access for examination of the affected welds from the outside of the reactor vessel is not possible. Access and permanently installed

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attachments inside the reactor vessel limit additional scanning of the welds included in this request for relief.

In addition to the required ultrasonic examinations, the interior of the reactor vessel, including welded attachments, received visual examination in accordance with Table IWB-2500-1, Examination Categories B-N-1, B-N-2, and B-N-3. Additionally, Examination Category B-D nozzle inner radius examinations were performed in accordance with ASME Code Case N-648-1, as amended by 10CFR50.55a. With the exception of acceptable wear visual indications identified at the core stabilizing lugs **RVSB-1, RVSB-3. RVSB-4, RVSB-5, RVSB-6 and acceptable slight protrusion of the locking pins on** the core stabilizing lugs at the RVSB-1 (0°), RVSB-5 (240°) and RVSB-6 (300°) locations, the visual examinations revealed no indications.

The subject welds were also examined in the second interval during the 10-year reactor vessel examination. The third interval examinations did not reveal any reportable flaws.

The extent of examination volume achieved ultrasonically, the alternate scans performed, and the system pressure tests provide assurance of an acceptable level of quality and safety.

7. Duration of Proposed Alternative

This relief request is applicable to the St. Lucie unit 1 Fourth Inservice Inspection Interval which began February 10, 2008 and ended February 9, 2018.

8. References

10CFR50.55a

ASME Section XI, "Rules For Inservice Inspection of Nuclear Power Plant Components," 2001 Edition through the 2003 Addenda.

ASME Section XI, Division 1, Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1"

ASME Section XI, Appendix VIII, "Rules For Inservice Inspection of Nuclear Power Plant Components," 2001 Edition

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Category B-A					
ASME Code Component	Component ID	Applicable Code Requirement and Weld Volume Coverage Obtained	Angle(s)/Wave Mode		Impracticality of Compliance
			Inner 15% T	Outer 85% T	
RPV Intermediate Shell-to-Lower Shell Circumferential Weld	9-203	Exam Category B-A Item No. B1.11 83% volume coverage	45L 70L	45L 45S	Inservice examination limited due to six surveillance capsule holders.
RPV Circumferential Bottom Head-to-Lower Shell Weld	10-203	Exam Category B-A Item No. B1.21 71% volume coverage	45L 70L	45L 45S	Inservice examination limited due to the proximity of the core barrel stabilizers and core lugs.
RPV Upper Shell Longitudinal Seam Weld at 15 Degrees	1-203B	Exam Category B-A Item No. B1.12 63% volume coverage	45L 70L	45L 45S	Inservice examination limited due to the outlet nozzle at 0 degrees integral extension
RPV Lower Head Peel Segment Welds	204-03-A, C, E	Exam Category B-A Item No. B1.22 53% volume coverage	45L 70L	45L 45S	Inservice examination limited due to the proximity of the flow baffle.
RPV Lower Head Peel Segment Welds	204-03-B, D, F	Exam Category B-A Item No. B1.22 43% volume coverage	45L 70L	45L 45S	Inservice examination limited due to the proximity of the flow baffle & core lug.

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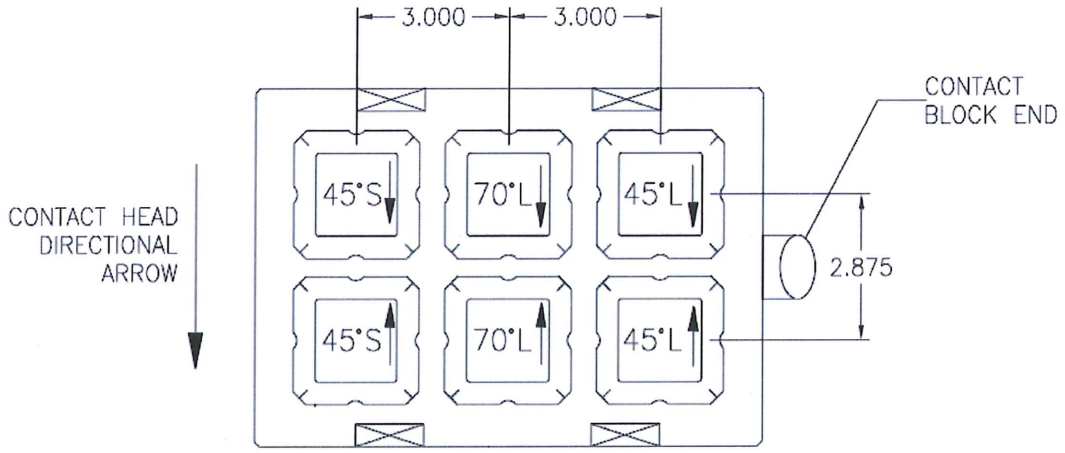
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

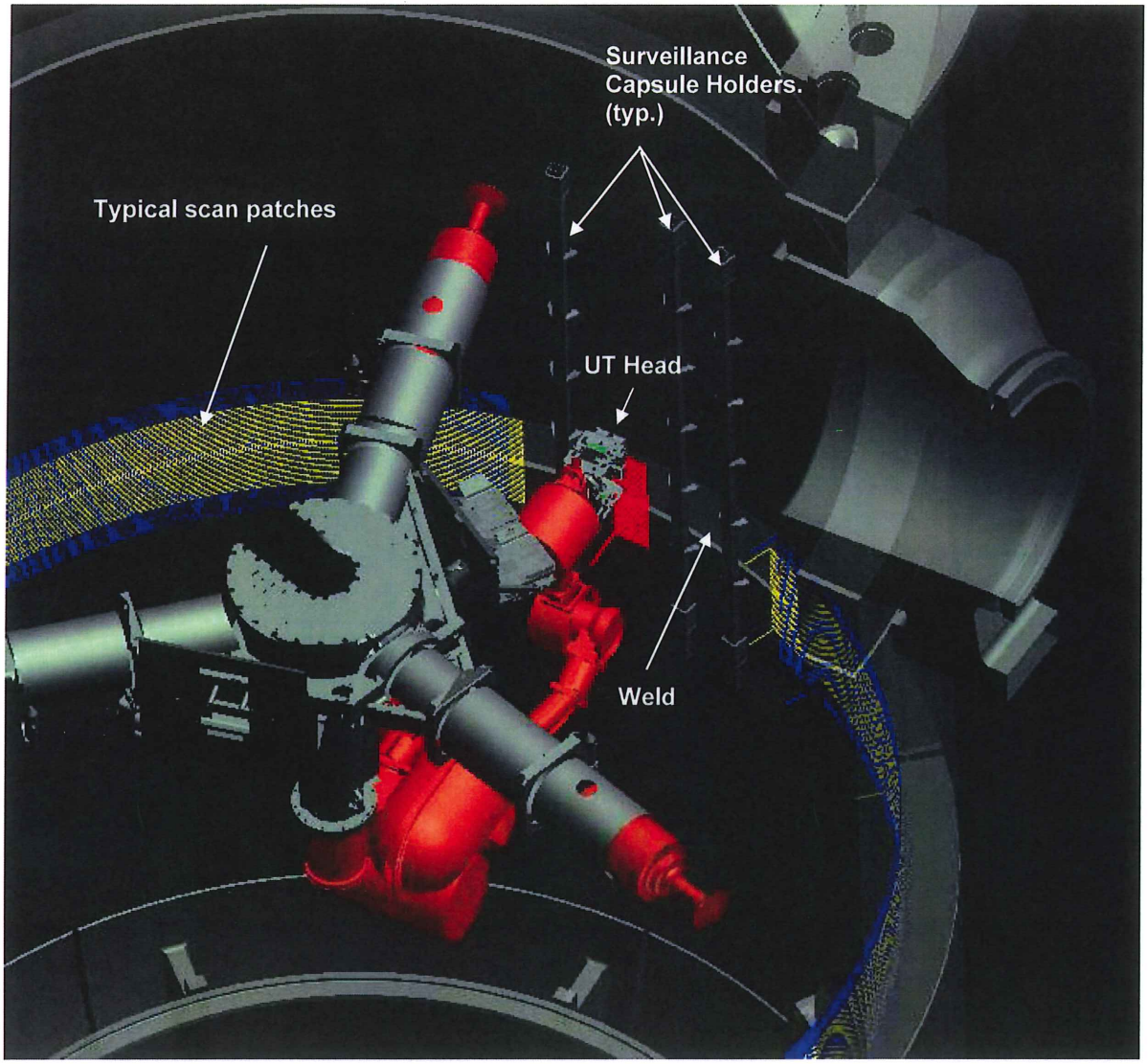


2x3 UT HEAD CONFIGURATION
FOR SHELL SCANNING
(AS VIEWED FROM BACK OF ROBOHAND COUPLING)

Illustration of the typical UT head configuration used for vessel shell weld scanning. Overall head dimensions are approximately 12" x 8".

Figure 1

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

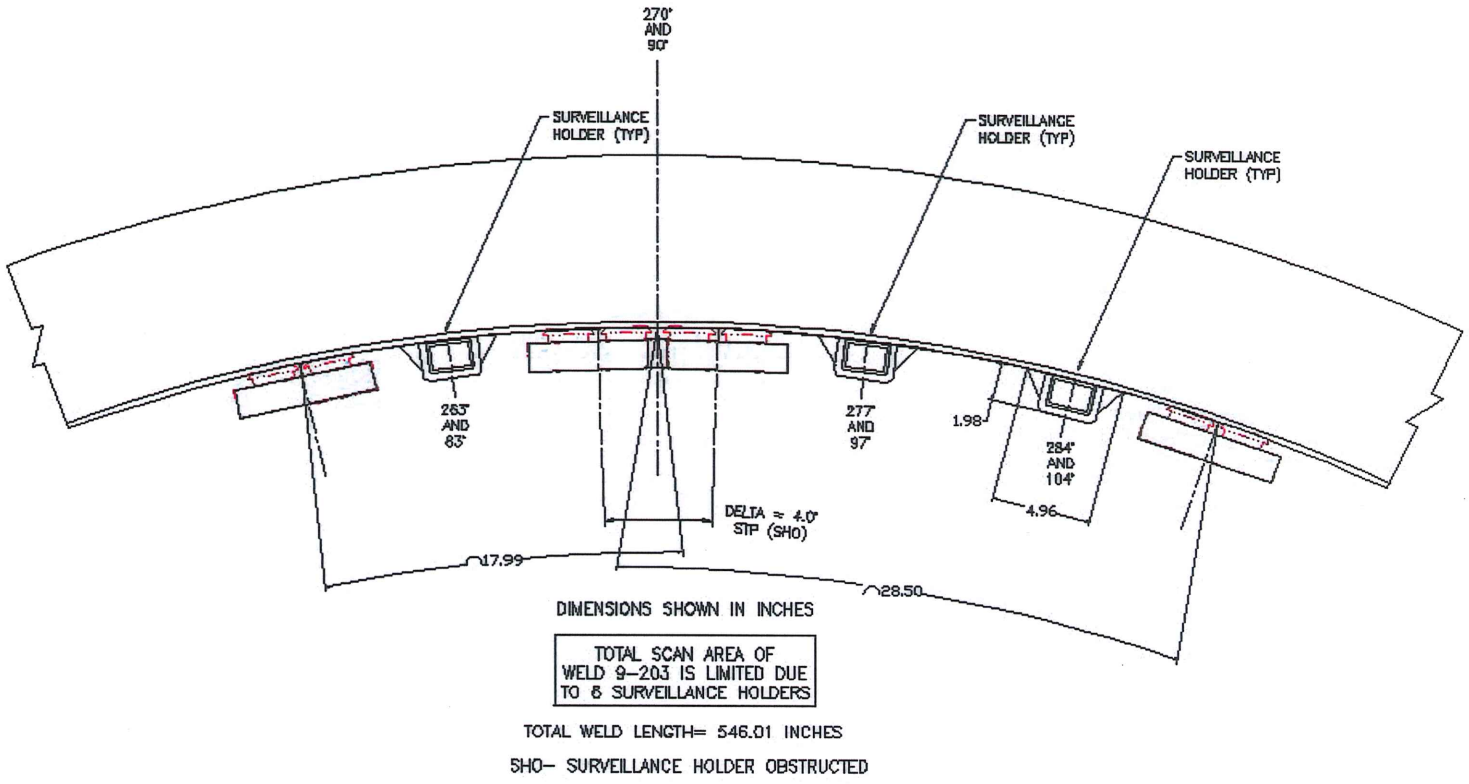


RPV Intermediate Shell-to-Lower Shell Circumferential Weld (9-203)

View of TWS robot in vessel shell region showing scan limitation caused by the surveillance capsule holders. The weld is covered by the surveillance capsule holders. These limitations occur at two circumferential locations on this weld at 180^0 apart. Single sided scan parameters are used near obstructions to improve examination coverage. Coverage obtained on this weld is 83%.

Figure 2

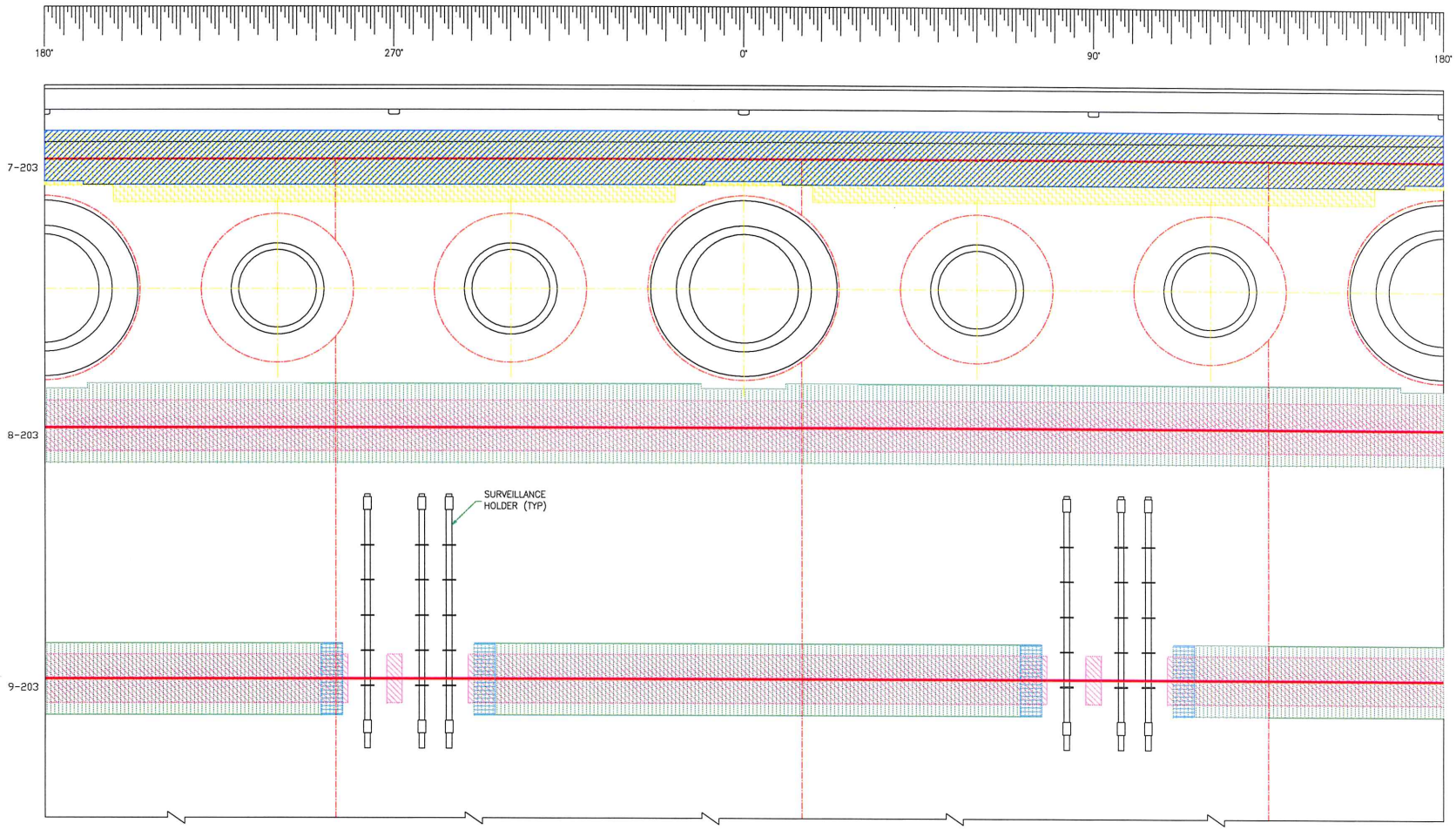
ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



RPV Intermediate Shell-to-Lower Shell Circumferential Weld (9-203)

Figure 3

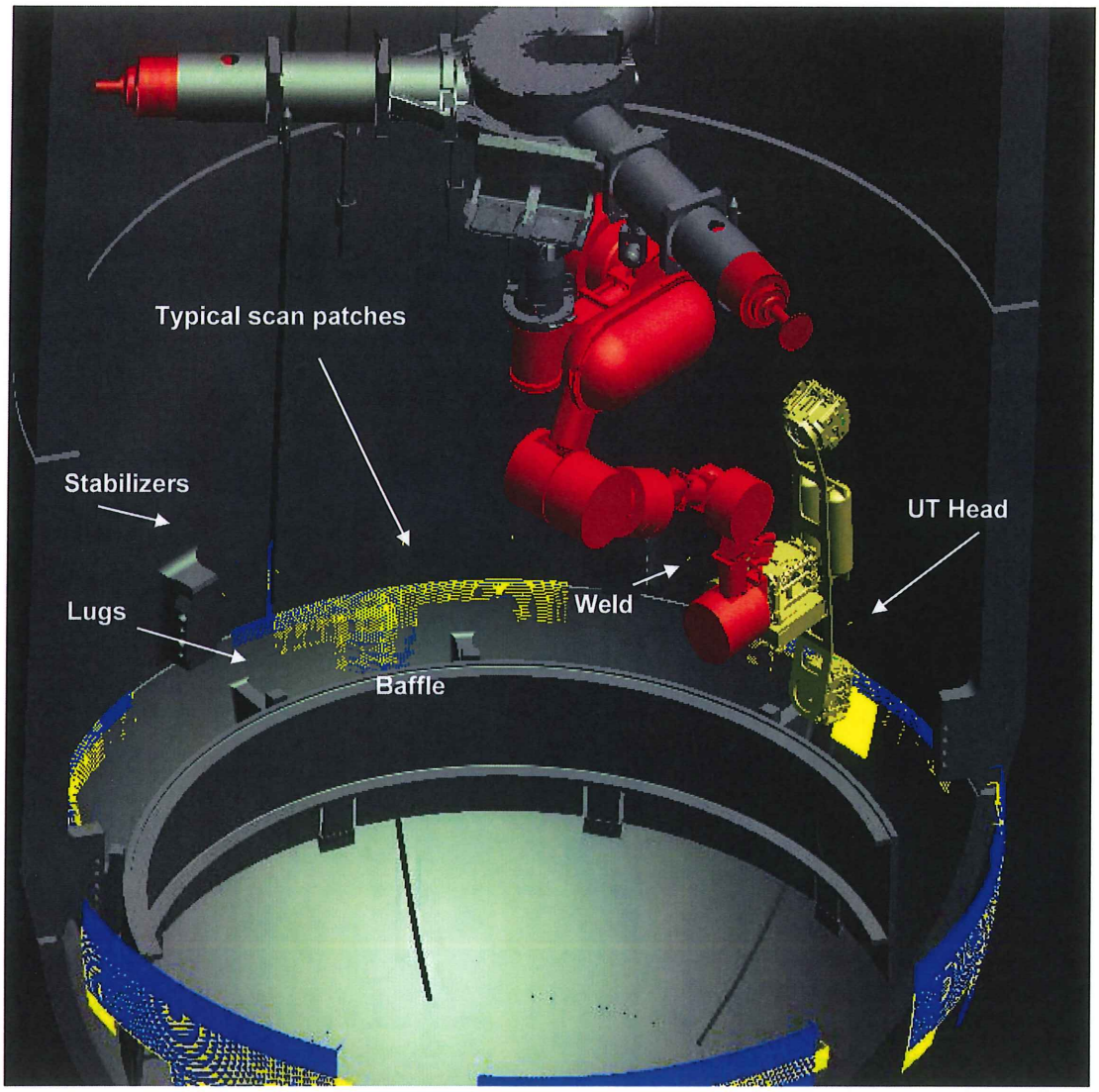
ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



RPV Intermediate Shell-to-Lower Shell Circumferential Weld (9-203)

Figure 4

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

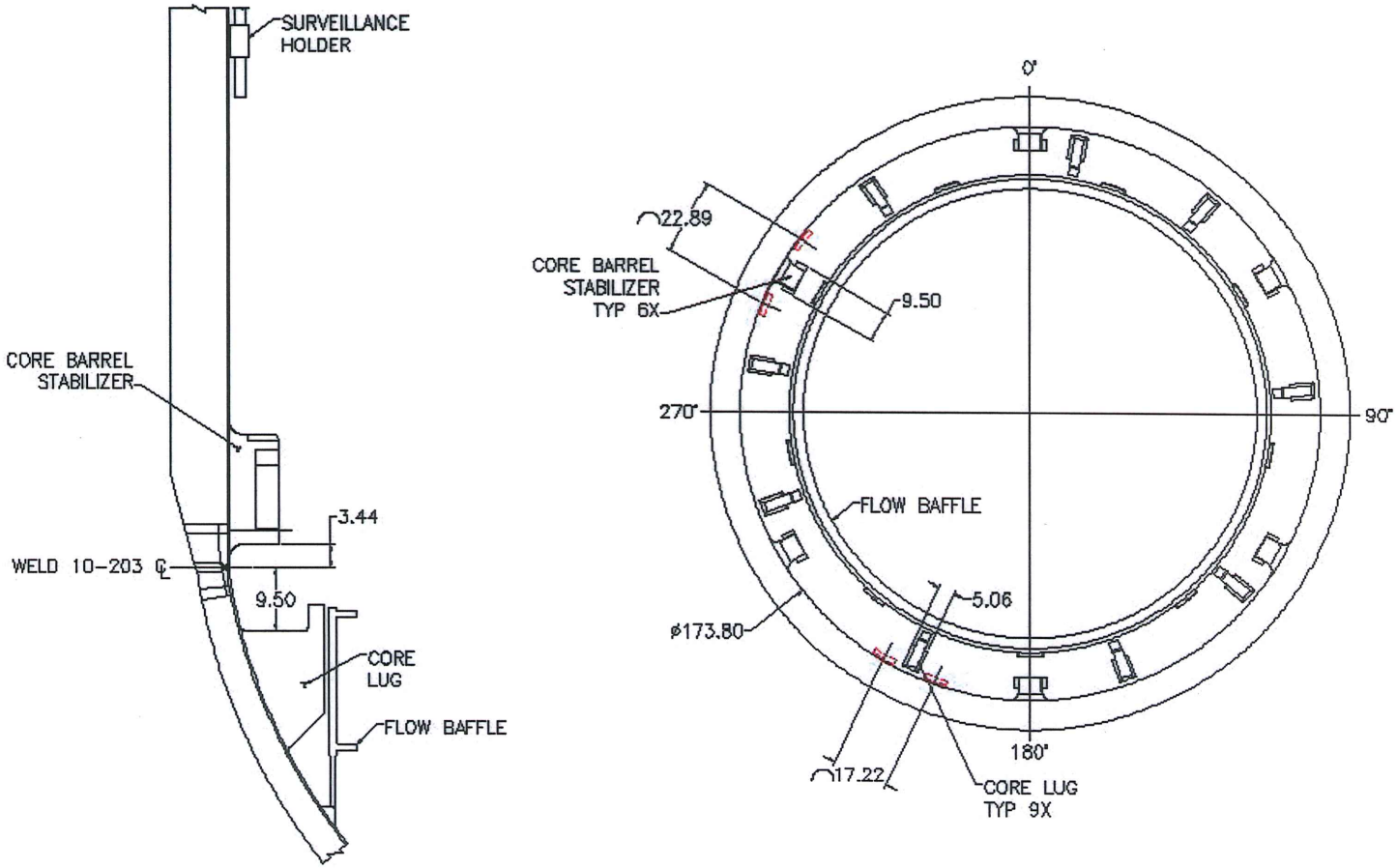


Bottom Head to Lower Shell Girth Weld (10-203) and Peel Segment Welds (204-03-A through F) Behind Flow Baffle

View of TWS robot in lower vessel shell region showing scan limitations caused by the Core Barrel Stabilizers, Core Lugs and the Flow Baffle. The weld examinations are obstructed by these features. Single-sided scan parameters are applied as applicable near the obstructions to increase coverage. Coverage on the circumferential weld is 71% and coverage on the peel segment welds is 53% for welds A, C, and E and 43% for welds B, D, and F.

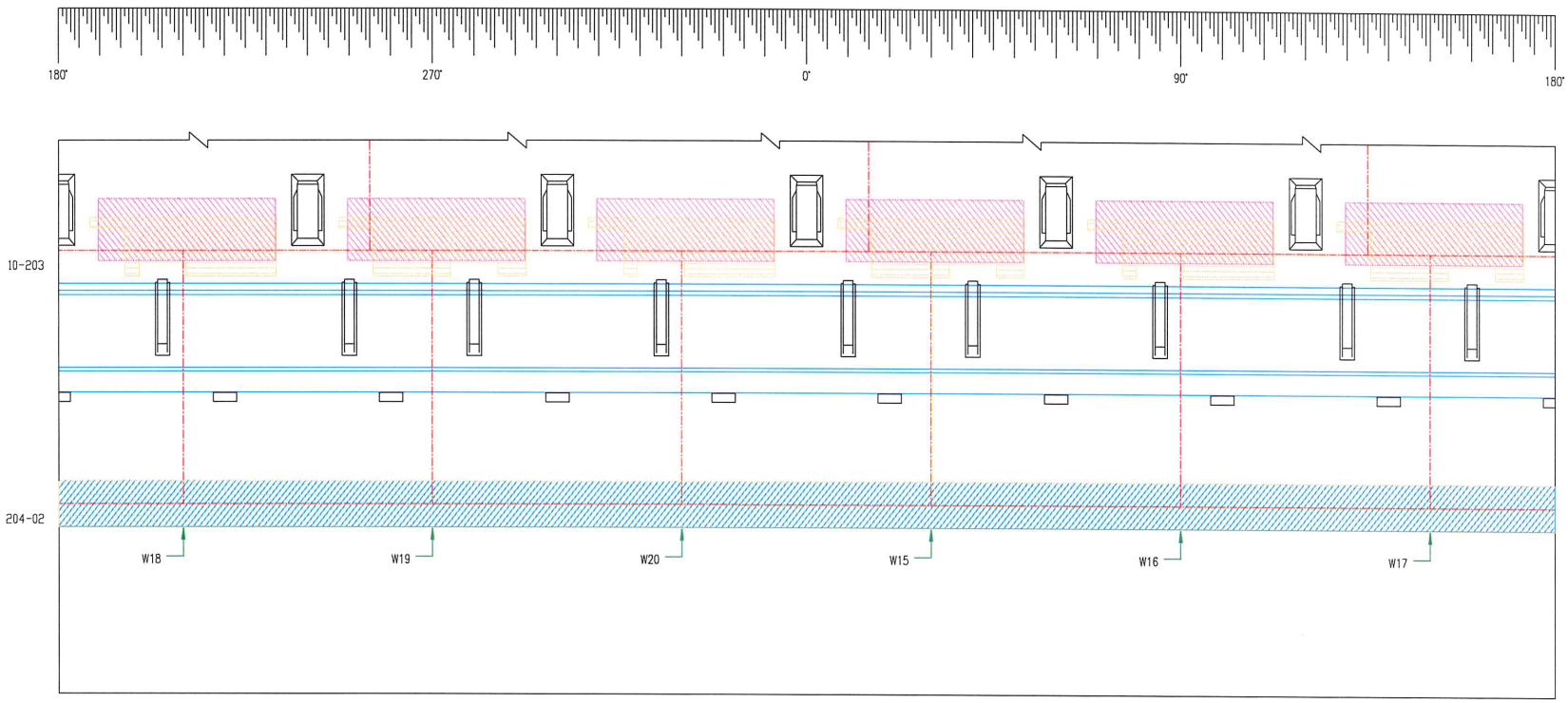
Figure 5

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



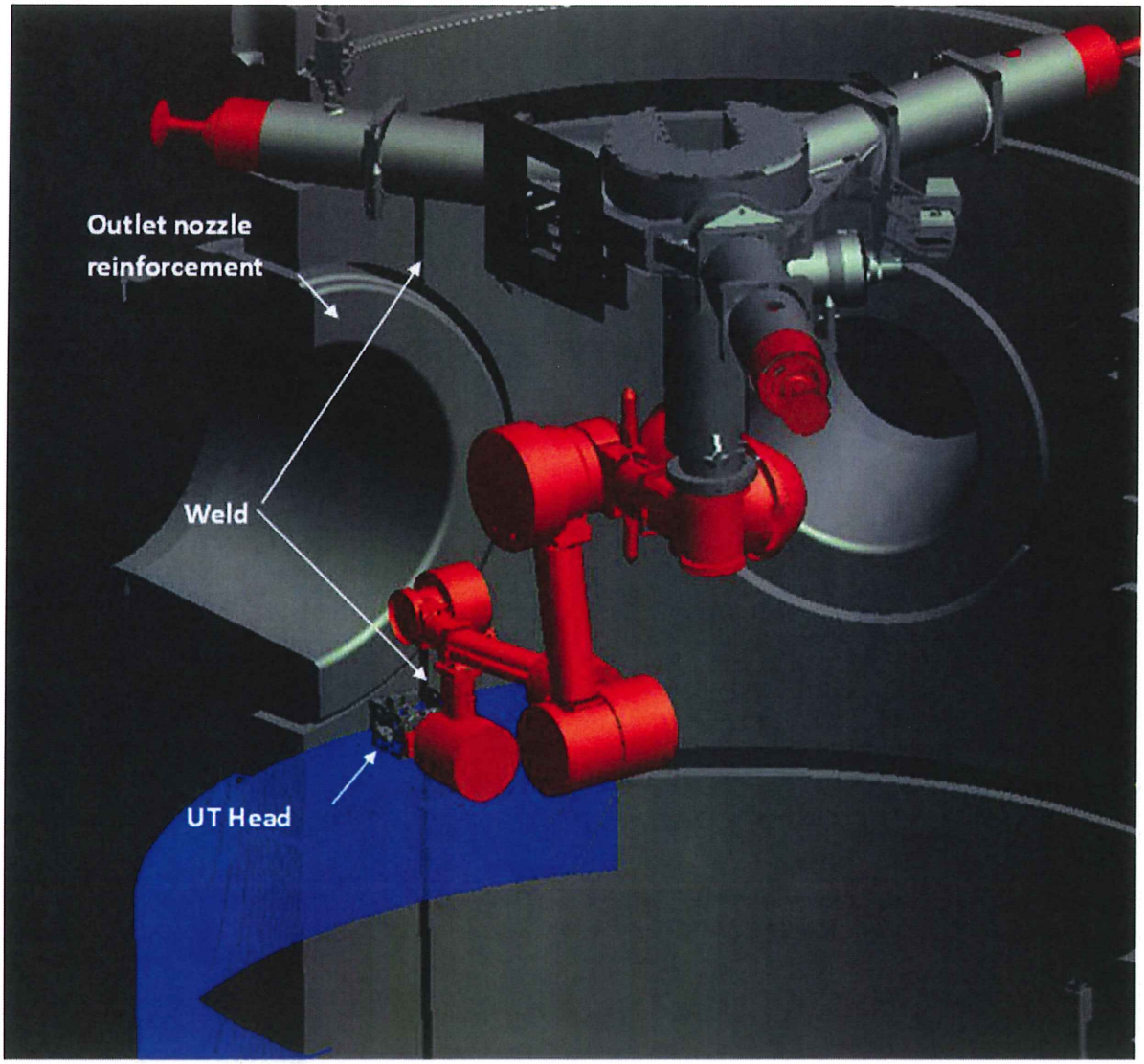
RPV Circumferential Bottom Head-to-Lower Shell Weld (10-203)
Figure 6

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



RPV Circumferential Bottom Head-to-Lower Shell Weld (10-203)
Figure 7

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

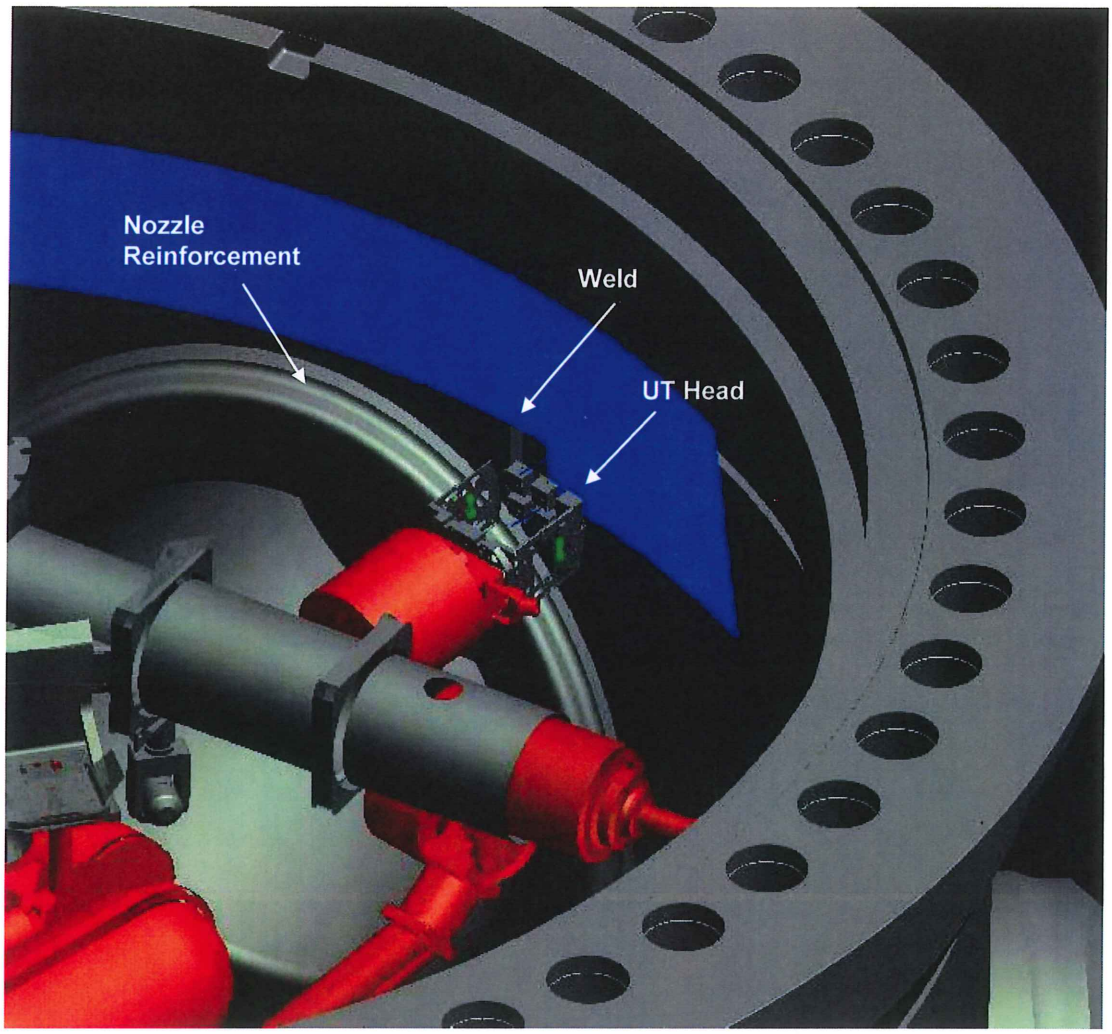


RPV Upper Shell Longitudinal Seam Weld at 15 Degrees (1-203B)

View of TWS robot in upper vessel nozzle belt region showing scan limitation caused by the outlet nozzle reinforcement. The weld intersects the outlet nozzle and limits UT head movement adjacent to the outlet nozzle on both the upper and lower portions of the weld. Single-side scan parameters are used on this weld in the axial beam directions to improve coverage. Coverage obtained on this weld is 63%.

Figure 8

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

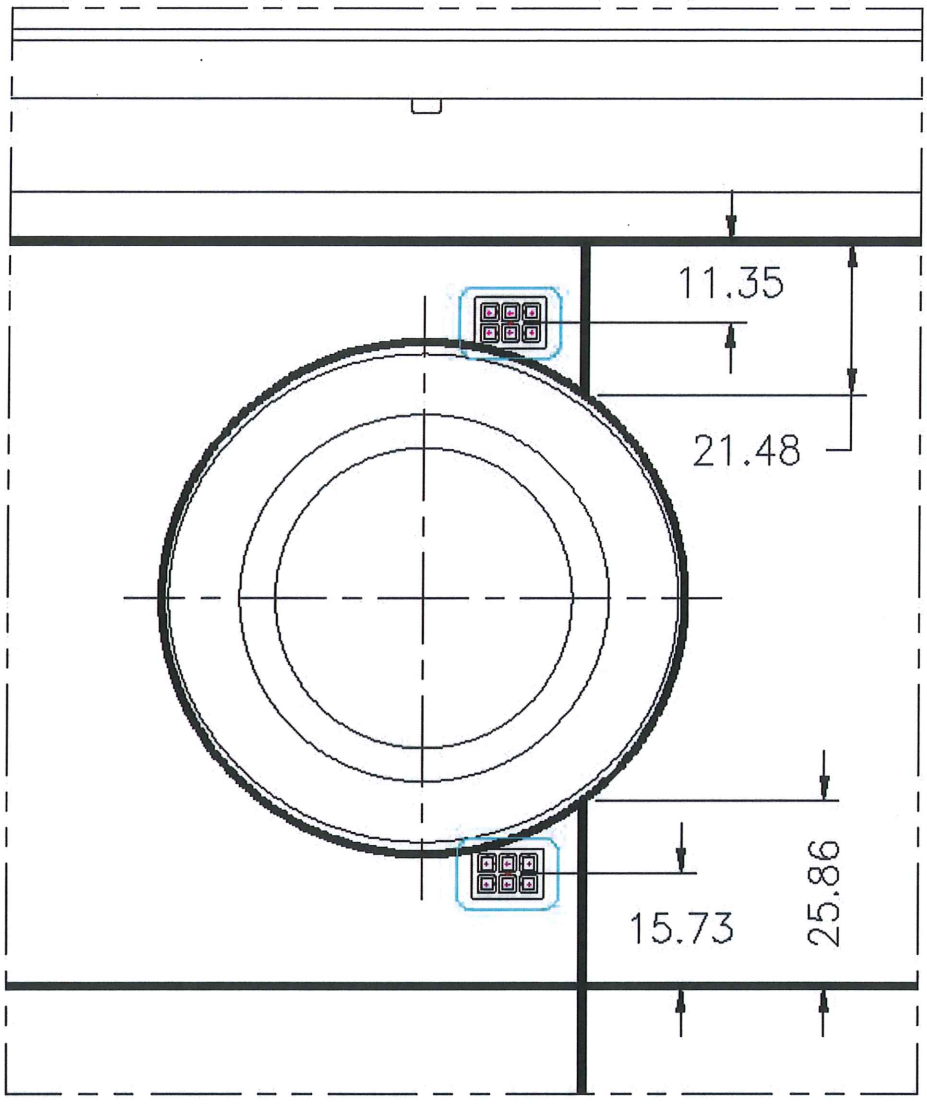


RPV Upper Shell Longitudinal Seam Weld at 15 Degrees (1-203B)

View of TWS robot in upper vessel nozzle belt region showing scan limitation caused by the outlet nozzle reinforcement on the upper portion of the weld. The weld intersects the outlet nozzle and limits UT head movement adjacent to the outlet nozzle. Single-side scan parameters are used on this weld in the axial beam directions to improve coverage. Coverage obtained on this weld is 63%.

Figure 9

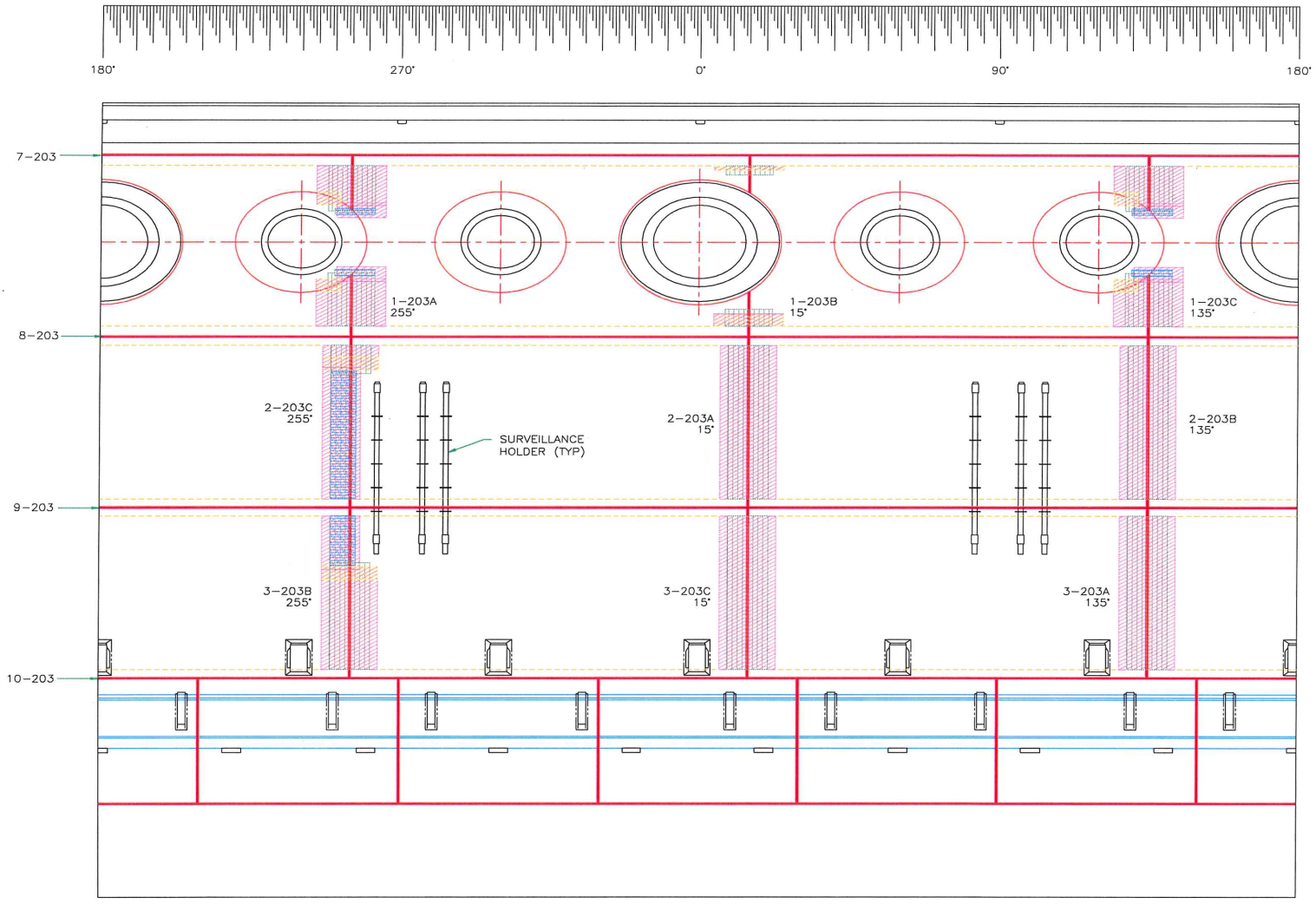
ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



RPV Upper Shell Longitudinal Seam Weld at 15 Degrees (1-203B)

Figure 10

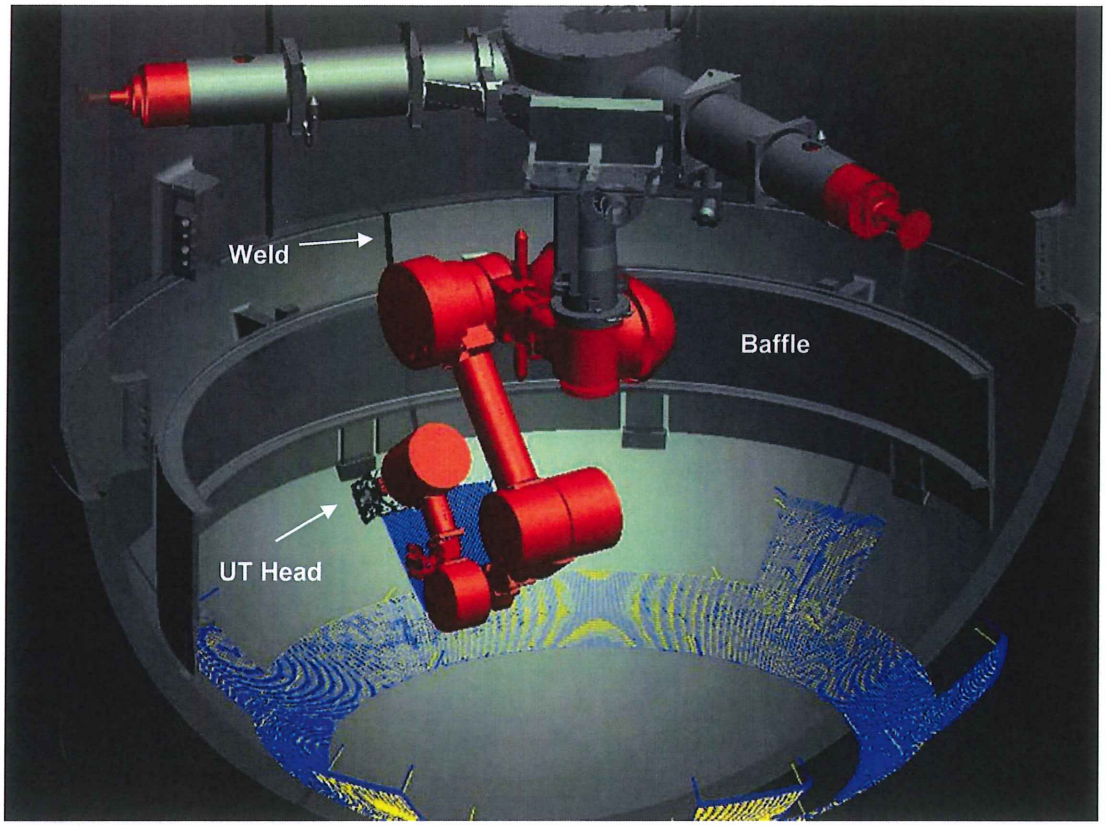
ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL



RPV Upper Shell Longitudinal Seam Weld at 15 Degrees (1-203B)

Figure 11

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

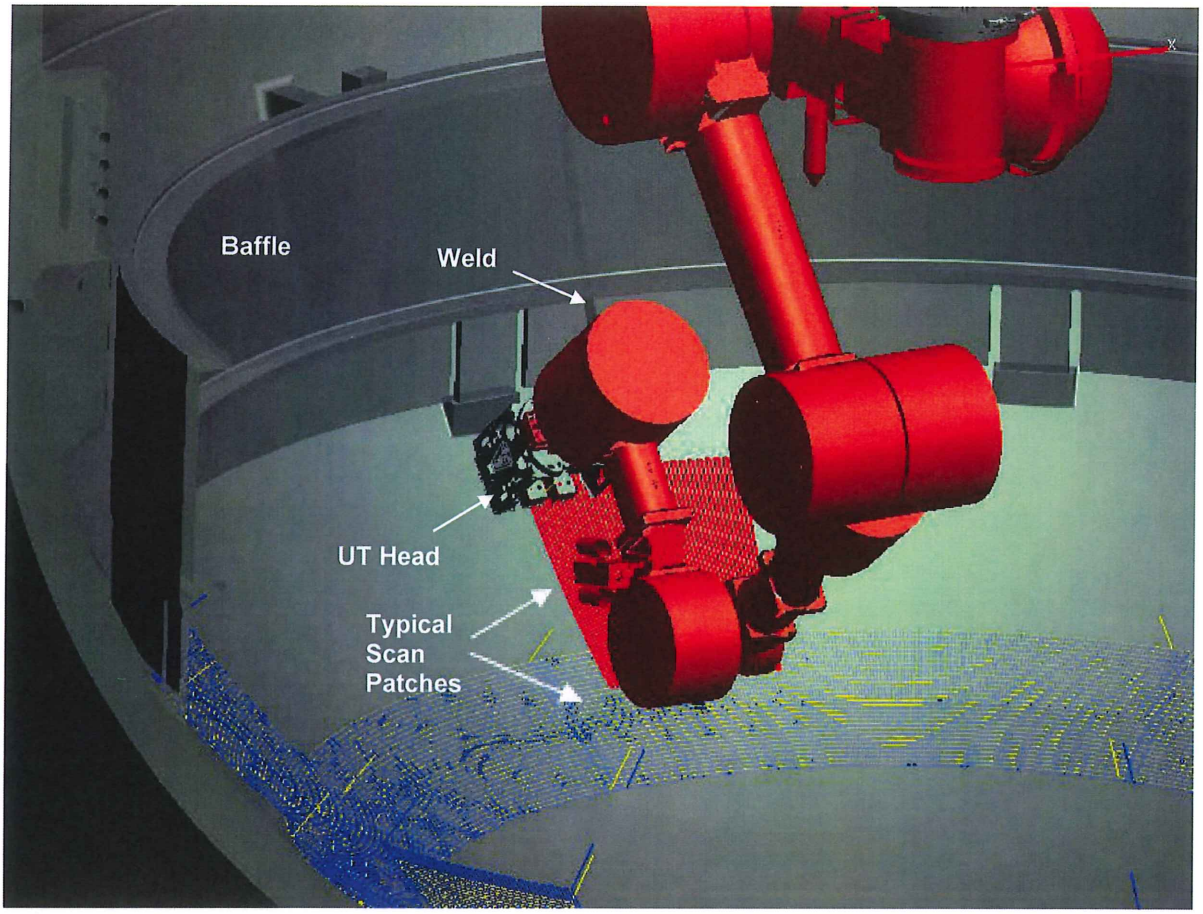


RPV Lower Head Peel Segment Welds (204-03-A through F)

View of TWS robot in lower head below flow baffle showing scan limitation caused by the baffle. The peel segment welds are covered by the baffle. Single side scan parameters are used on these welds below the baffle for the axial beam directions. Coverage on the peel segment welds is 53% for welds A, C, and E and 43% for welds B, D, and F.

Figure 12

ST. LUCIE UNIT 1
RELIEF REQUEST NUMBER RR#16, REVISION 0
LIMITED PIPING EXAMINATIONS FOR THE FOURTH INSPECTION INTERVAL

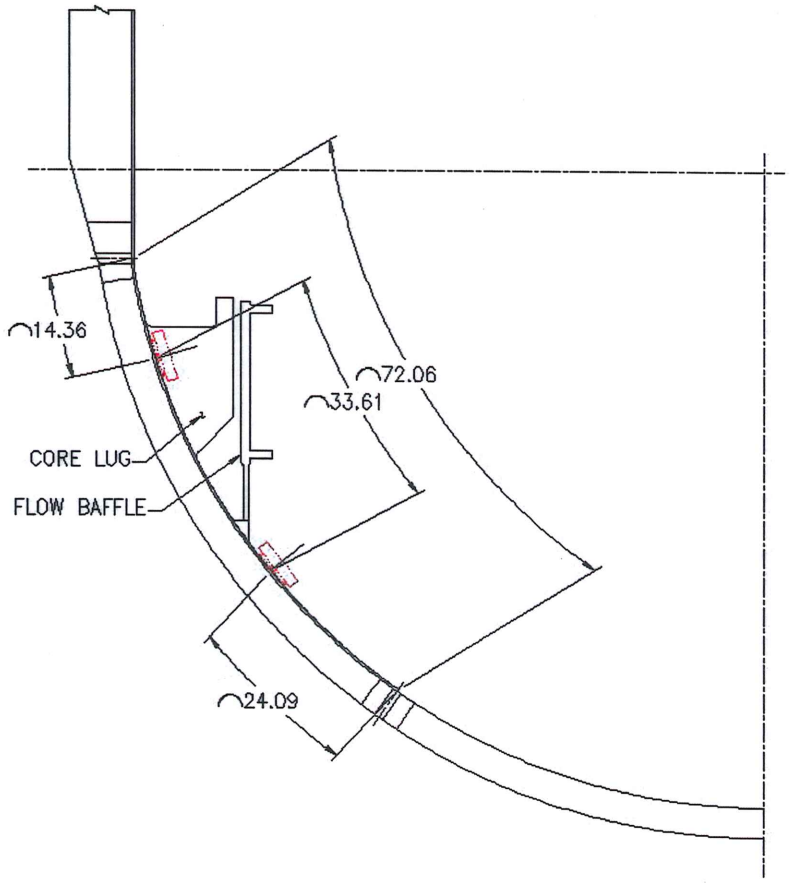


RPV Lower Head Peel Segment Welds (204-03-A through F)

View of TWS robot in lower head below flow baffle showing scan limitation caused by the baffle. The peel segment welds are covered by the baffle. Single side scan parameters are used on these welds below the baffle for the axial beam directions. Coverage on the peel segment welds is 53% for welds A, C, and E and 43% for welds B, D, and F.

Figure 13

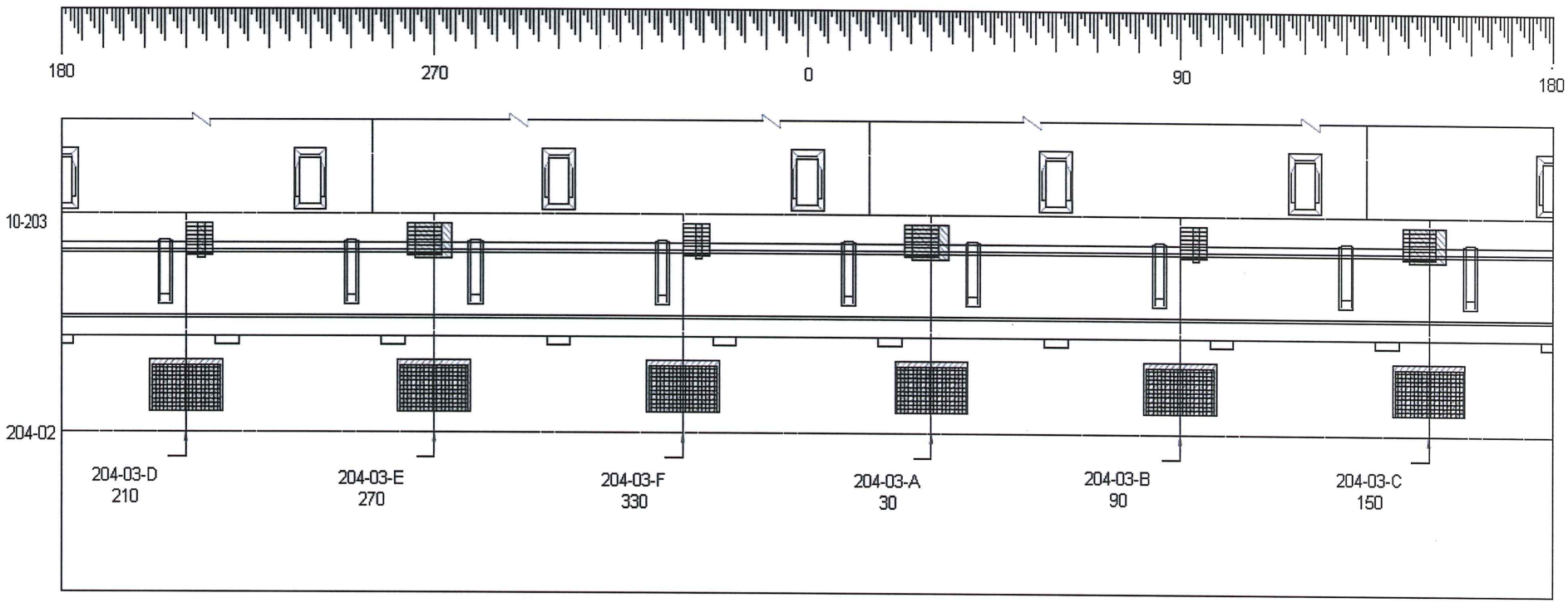
St. Lucie Unit 2
THIRD INSPECTION INTERVAL
RELIEF REQUEST NUMBER 17, REVISION 0



RPV Lower Head Peel Segment Welds (204-03-A through F)

Figure 14

St. Lucie Unit 2
THIRD INSPECTION INTERVAL
RELIEF REQUEST NUMBER 17, REVISION 0



RPV Lower Head Peel Segment Welds (204-03-A through F)

Figure 15